USAID OFFICE OF FOOD FOR PEACE

BURUNDI

BELLMON ESTIMATION

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Burundi

Bellmon Estimation

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Preface

During the period February through March 2009, the Bellmon Estimation Studies for Title II (BEST) team undertook an analysis aimed at generating recommendations to inform the Bellmon Determination to be made by USAID.

In anticipation of funding a Prevention of Malnutrition in Children Under Two Approach (PM2A) in Burundi, USAID requested an analysis to determine that the direct distribution and monetization of US agricultural commodities provided for use in Burundi during FY10 through a Title II PM2A activity meet the criteria set forth in the Bellmon Amendment.

Table of Contents

Acronyms

ART	Anti-Retroviral Therapy
BEST	Bellmon Estimation Studies for Title II
CCC	Commodity Credit Corporation
CDSO	Crude Degummed Soya Oil
CIF	Commodity Insurance and Freight
CPI	Consumer Price Index
CRS	Catholic Relief Services
CS	Cooperating Sponsor
CSB	Corn Soya Blend
DEV	WFP Development Program
DMFSS	Disaster Management Food Security Sector
ENRDC	Chronic Malnutrition Reduction Strategy
E-VGF	Emergency Vulnerable Group Feeding
FANTA-2	Food and Nutrition Technical Assistance project
FAOFCS	Food Consumption Score
FFA	Food For Assets
FFP	Food For Peace
FFT	Food For Training
FOB	Freight On Board
FY	Financial Year
GDP	Gross Domestic Product
GOB	Government of Burundi
HBSN	Health-Based Safety-Net
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IDP	Internally Displaced Person
IMC	International Medical Corps
INDECA	National Institute of Agricultural Commercialization
IPP	Import Parity Price
MCH	Maternal and Child Health
MEWIT	Merchandise Wholesale and Import Trade Enterprise
MFI	Micro-finance Institution
MIS	Market Information System
MMU	Monetization Management Unit
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health
MT	Metric Ton = 2,204.62 pounds
MYAP	Multi-Year Assistance Program (PL-480 Title II)
NGO	Non-governmental Organization
PL 480	Public Law 480
PM2A	Prevention of Malnutrition in Children under Two Approach
PPP	Purchasing Power Parity
PRRO	WFP Protracted Relief and Recovery Operations
RM	Regional Monetization
SAVE	Save the Children

SBSN	Socail-Based Safety-Net
SFC	Soy-Fortified Cornmeal
SFW	Soy-Fortified Wheat
TB	Tuberculosis
TRC	Tanzania Railways Corporation
URC	Ugandan Railways Cooperation
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USG	United States Government
WFP	World Food Program

Chapter 1. Executive Summary

This report presents findings related to both monetization and distribution which will aid in making a Bellmon determination in advance of an planned Prevention of Malnutrition in Children under Two Approach (PM2A) program in Burundi. This study is based on field work and desk study conducted between February and March 2009. Since monetization is likely to fund these activities, a market analysis of key commodities was conducted. Proxy indicators of additionality and current food aid programs were reviewed to provide guidance to ensure a PM2A program has minimal negative impact on local food production and markets.

1.1. Monetization Analysis

Commodities were considered for monetization based on the following criteria:

- Eligibility for export from the US;
- Eligibility for import to the recipient country;
- Significance of domestic demand;
- Domestic supply shortfalls are filled through commercial imports and food aid;
- Presence of adequate competition for the commodities; and
- Expectations that fair market prices can be obtained.[1]

A review of trade data revealed three commodities that Burundi imports in sufficient quantity and value to meet the administrative funding requirements of a PM2A program: wheat, maize, and vegetable oil. This Bellmon analysis therefore considered these three commodities as possible candidates for monetization.

In 2008, CRS monetized 4,310 MT of HRWW (in bulk Commodity Insurance and Freight (CIF)) Dar es Salaam. The two main wheat mills in Burundi paid US$425/MT, which is 115 percent of the estimated IPP at a time when international prices were highly volatile. The HRWW was delivered in November 2008, when prices had declined sharply from their highs in June/July. Despite this, both mills honored their contracts. Both indicated interestin procuring 5,000 MT of HRWW in 2009.

The amount of wheat monetized by CRS in 2008 (4,300 MT) exceeds the annual average importation of wheat and wheat flour into Burundi (five year average 4,823 MT/yr), and is 40

[1] A fair market price is defined as the price a commercial importer would be required to pay on the open market for a comparable commodity of a comparable quality. This price is known as the import parity price (IPP)). By ensuring the sales price obtained is at or near IPP, Cooperating Sponsors help to ensure the monetized commodity does not undercut prices offered by sellers' of similar commodities, which would disrupt markets and normal trade patterns.

percent of the total estimated annual consumption of approximately 12,000 MT. Although the price paid in 2008 reflects the IPP at the time, and actually exceeded market prices at the time of delivery three months later, monetizing this volume of wheat is likely to substantially disrupt normal trading patterns, particularly if monetization of this volume is conducted on a regular basis. Such a large volume also runs the risk of introducing price distortion if future tenders are below IPP. BEST's methodology recommends monetizing volumes up to 10 percent of a country's commercial imports; in this case, the monetization of wheat in Burundi would not generate sufficient revenue to fund PM2A activities. Therefore, wheat does not appear to be a highly suitable commodity for the purposes of in-country monetization.

Other commodities evaluated for their potential to monetize include maize and edible oil. Maize is the largest commercially-imported food commodity in Burundi, with nearly 8,500 MT imported at a cost of US$2.36 million per year over the past five years. Monetizing 10 percent of this volume, for example, would only generate US$280,000 at current IPP. Nearly all of Burundi's imported maize (over 90 percent) has been supplied by Uganda and Tanzania; therefore, any monetization of US maize would affect these suppliers, both of which are LIFDCs with USAID programs supporting agricultural productivity and marketing. Therefore, maize would not be a suitable commodity for monetization.

Edible oil consumption is composed primarily of palm oil (70 percent of total over five years) which is produced indigenously (20 percent), imported (30 percent, primarily from Uganda and Tanzania), with the balance provided through food aid distribution programs. Total imports have averaged only US$2.0 million. Monetizing 10 percent of imports, for example, would only generate US$343,200 at current IPP, an amount insufficient for program needs.

Rice was also considered, but historical averages of imports are insufficient to generate revenue for the program.

Based on market volumes and values, BEST does not recommend in-country monetization of any commodity, but suggests instead that regional monetization be considered.

1.2. Distribution Analysis

The BEST distribution analysis is based on the assumption that a well-designed and executed food aid program, whose transfers closely correspond to the needs of the household, will have minimal to no impact on the market or local production incentives. Once effective application of beneficiary criteria has accurately identified those households in need of food assistance, maximum food security impact and minimum leakages are ensured when the size, frequency, and commodity composition of rations correspond most closely to household food needs.

A PM2A program presents both an opportunity for long-term human capital investment and a unique challenge to avoid introducing possible disincentives in the short- to medium-term because the key targeting criteria is based on a child's age and a women's physiological status rather than on an estimated household food deficit. Initial geographic targeting of areas with a

greater proportion of food-deficit households will help to avoid introduction of disincentives to production and markets disruption.

A US$10 million program in Burundi with all funding devoted to distributed food aid rations (i.e., no monetization) could target nearly 25,000 households per year on a 12-month basis. Logistical and programming considerations, which include the necessary presence of minimal services for successful program implementation, may warrant concentration of funds into select provinces. However, geographic concentration of distributed food aid increases the difficulty of effectively targeting communities without increasing the likelihood that substantial disincentive effects will be introduced (even within provinces with relatively high levels of food insecurity). This underscores the importance of selecting the most food insecure communes or collines within each province for PM2A implementation, even when focusing on only a select number of provinces.

As of the date of this report, beneficiary targeting had not been completed. However, this analysis focuses on the five provinces of Cibitoke, Kirundo, Ruyigi, Muyinga, and Cankuzo because FFP guidance suggests they represent likely areas for program implementation on the basis of one or more of the following criteria: (1) high levels of food insecurity and/or malnutrition; (2) the catchment area's absorptive capacity of food; (3) relative social stability suggesting long-term development programs will have a chance to flourish; (4) existence of minimal services necessary for the successful implementation of a PM2A program; and (5) the capacity for leveraging with other activities, such as food security and/or water and sanitation interventions.

Of the five provinces studied, evidence suggests that PM2A activities would be least likely to introduce Bellmon concerns (and would have the greatest food security impact) in Cibitoke or Muyinga, the provinces with high percentages of food insecure households, high rates of chronic malnutrition, and relative social stability. If the entire US$10 million program is in distributed food rations (i.e., no monetization), a PM2A program implemented in any one or combination of these provinces would be most accurately targeted (from a Bellmon perspective) if, for example:

- US$5 million (half a US$10 million program) is directed to Cibitoke and the remaining US$5 million is directed to Muyinga because PM2A coverage in individual provinces would closely align with the number of food insecure households eligible for a PM2A program;
- US$7.5 million is directed to either Cibitoke or Muyinga, and the remaining US$2.5 million directed to Kirundo; or
- US$5 million is directed to either Cibitoke, Kirundo, or Muyinga province, and US$2.5 million each is directed to relatively stable communes within Cankuzo and Ruyigi.

These findings are strengthened when additional indicators of food insecurity and/or potential for relative impact are considered. For example, while malnutrition rates are high throughout Burundi, among the five provinces under review, prevalence of stunting is highest in Cibitoke and Muyinga. In addition, existing program coverage appears least extensive in Cibitoke

relative to the other four provinces under review, which suggests a higher relative absorptive capacity in terms of additional programs in Cibitoke.

Moreover, while food security conditions have deteriorated or are expected to deteriorate in both Kirundo and Ruyigi, the underlying reasons are different and important to consider for success of a PM2A program. While both provinces face population movements, Kirundo is relatively more vulnerable to weather shocks while Ruyigi faces a larger influx of returnees/refugees which suggests a social instability which would not be conducive to a PM2A program. Both Cankuzo and Muyinga also have sizable refugee/returnees populations. This appears to be a greater concern in Cankuzo, particularly in the eastern half of the province, relative to Muyinga, where the largest population appears primarily in the northernmost commune of Giteranyi. To maximize the impact of a preventative nutrition intervention program, it is preferred that beneficiaries remain in the program for as long as feasible (preferably from early in the 2nd trimester of pregnancy through the end of the child's 23rd month of life). To the extent population movements make tracking and retention of beneficiaries more problematic, the long-term benefits of a PM2A program would not be maximized in areas with sizeable refugee/returnee populations.

To best meet household food needs and avoid introducing disincentives, food aid should be delivered, to the greatest extent possible, during lean season months (especially during the peaks in February and October) when both market supply and household ability to draw on own production for consumption are at their lowest. Given that PM2A is a blanket distribution program, with a set monthly ration schedule, one option worth consideration would be to increase the ration size during the lean season and decrease the ration size during the harvest season

1.3. Adequacy of Ports, Distribution, and Storage

There is adequate port capacity in Mombasa and Dar es Salaam, the two ports used for food aid delivery to Burundi. Drawbacks include: 1) increasing piracy activity in the Horn that has disrupted US and other nations' food aid shipments to Mombasa, 2) transport to Burundi from either port is both time consuming and expensive, via road, railroad, and/or boat, 3) delivery from Dar es Salaam can take three months or more, 4) delivery from Mombasa, while less time consuming, is more expensive.

There are adequate, clean, and secure storage facilities available in Bujumbura and, to a limited extent, further up-country. The storage is offered by the private and public sectors, WFP, and NGOs. Combined secure warehouse space in Bujumbura is sufficient for over 36,000 MT. There is an additional 10,000 MT in Ngozi, as well as smaller facilities elsewhere in the country that can accommodate 2,500 MT (Manama, Gitega, Muyinga, and Karuzi).

Chapter 2. Country Background and Overview

Key characteristics of the Burundian economy, food security, trade, agriculture, and policy situation include:

2.1. Economy / Food Security

- An economy dominated by subsistence agriculture.
- Low availability of inputs, including both land and fertilizers, has resulted in very low yields
- Consistently high population growth of close to three percent, not accompanied by a similar or greater level of investment or production.
- Per capita productivity of no more than US$114 per annum, so that the GDP of Burundi in 2008 was US$912 million at official rates and US$3.1 billion on a purchasing power parity basis (PPP).
- At least five million people each produce no more than US$60 per annum at official rates or US$200 per annum at PPP.
- Overall level of production is adequate to supply 70 percent of dietary needs (based on the standard of 2,100 kcal/person/day). On this basis, an effective national deficit of a little over 500,000 MT of maize, or its nutritional equivalent, exists to be met by commercial imports and food aid. The level of commercial imports has not exceeded seven percent of this deficit, and food aid interventions have rarely contributed more than 13 percent, so that for the last five years the majority of the population has subsisted on less than 80 percent of standard nutritional requirements.
- Over 35,000 Burundian refugees are returning from Tanzania, and nearly 20,000 DRC refugees continue to be supported by UNHCR in Burundi.
- While famines have been rare, chronic malnutrition has become widespread.

2.2. Trade

- Burundi currently exports goods valued at approximately US$120 million, the majority of which is coffee and gold. This value is more than double export values of 2001.
- Gold exports have increased from 483 kg in 2002 to 4,313 kg in 2006, reflecting growing transshipment from neighboring DRC.
- Minimum commercial food imports due to high transport costs for bulky food commodities that place most imported foodstuffs beyond the reach of the majority of the population.
- Imports have consistently exceeded exports in value and have been financed by external borrowing and donor assistance.
- A declining balance of trade that has led to a decline in the value of the Burundi franc and to continual inflation at an average annual rate of 11 percent.

2.3. Agricultural Sector

- Agriculture contributes 46 percent of GDP and employs 90 percent of the population, with little to no commercial production.
- Low productivity due to the absence of access to and/or high cost for inputs and improved technologies.
- Crops consist primarily of beans, starchy tubers (cassava, sweet potato, and taro), bananas, and cereals.
- Low livestock ownership limits availability of meat and livestock products.
- An overall level of production that is adequate to supply 70 percent of dietary needs (based on the standard of 2,100 kcal/person/day), resulting in an effective national deficit of a little over 70-100,000 MT of maize or its nutritional equivalent.

2.4. Policy Issues

- Price controls have been liberalized and market structures are in transition. There is no futures trading structure. There are no foreign currency restrictions and foreign exchange is available. The credit system is liberalized and interest rates are fixed by the market.
- No strategic food reserve exists.
- There are no restrictions to importing GMO commodities.
- Tariff and taxes are not applied to food aid.

In summary, Burundi is currently characterized by high per capita food deficits, a shortage of investment, very low level of productivity, constant inflation, and low levels of exports and imports. Additional information on the Burundian economy, food security, trade, agriculture, and policies is found in Annex I.

Chapter 3. Food Aid Overview

This section outlines previous initiatives as well as initiatives planned within the next 1-2 years. See Annex III for a description of ongoing food aid programs.

3.1. Previous Initiatives

The food aid situation in Burundi over the past five years has been characterized by emergency and non-emergency feeding programs managed through WFP. USDA provided the Burundian government with 6,000 thousand MT of maize and 2,000 MT of beans in both 2005 and 2006 via its commodity credit program. Because of the unstable civil situation in Burundi, all USAID contributions were distributed by WFP between 2004 and 2007. In 2008, USAID provided distributed food aid (1.2 MT of Corn Soya Blend (CSB), Soy-Fortified Wheat (SFW), Soy-Fortified Cornmeal (SFC), and vegetable oil) directly through its Title II program to CRS and its partner International Medical Corps (IMC) to provide health, nutrition, sanitation, and hygiene interventions, as well as livelihoods training in agroenterprises and savings/lending schemes. CRS monetized HRWW in Dar es Salaam to generate US$1.8 million in funds for this program.

Rations provided by WFP are intended to provide minimum protein, energy, and micronutrient requirements in a food basket that contains maize and maizemeal, pulses, vegetable oil, and corn-soy blend, along with salt and sugar.[2] Table 1 provides summary data on commodities and quantities that have been donated by USAID, USDA (via Commodity Credit Corporation (CCC)), and other international partners through the WFP. More detailed information is provided in Annex III.

Table 1. Summary of Food Aid by Donor (MT)

Donor/Program	2004	2005	2006	2007	2008
USAID	36,700	31,700	24,900	11,410	17,500
USDA	0	9,000	9,000	0	0
WFP	34,330	32,688	41,721	34,030	41,332
Total	71,030	73,388	75,621	45,440	58,832

3.2. Planned Initiatives

3.2.1. USAID

USAID/FFP is making available US$10 million per year over five years for the management and implementation of the Prevention of Malnutrition in Children under Two Approach (PM2A).

[2] WFP 2008

PM2A will target pregnant women and lactating mothers, and children up to the age of two years. The program is designed to provide the following services to the targeted population:

1. General nutrition and health services for children including vitamin A supplementation, de-worming, management of diarrheal diseases, malaria prevention strategies (if applicable), immunization, prevention and treatment of iron deficiency and growth monitoring and promotion;
2. A strong behavioral change/communication strategy focusing on improved preventive practices in feeding, care, hygiene and the seeking of health services for infants and young children up to 24 months of age, as well as for pregnant women and lactating mothers;
3. Management of severe acute malnutrition for children under five years including active case detection and treatment of children with severe acute malnutrition;
4. Monthly distribution of food rations to beneficiaries;
5. Pre- and post-natal care;
6. Home visits to pregnant women, mothers of newborn infants, severely malnourished children and/or children with faltering growth.

3.2.2. WFP[3]

The WFP has a two year Protracted Recovery and Relief Operation (PRRO) planned for 2008-2010 that will assist the Government Of Burundi (GOB) in disarmament and reintegration, addressing HIV/AIDS, restoration of basic services, and improvement of food security and promotion of livelihoods. This program will focus on six provinces in northern and central Burundi that are characterized by high levels of food insecurity (Ngozi, Kayanza, Kirundo, Muyinga, Karuzi, and Ruyigi) and includes the following activities:

- A relief component of general food distribution and support for vulnerable groups;
- Recovery interventions including school feeding, asset creation, skills training, and nutrition, including support for those with HIV.

Food distribution programs will target beneficiaries in the following ways:

1. For refugees and returnees, WFP will provide a full ration for the 20,000 DRC refugees in Burundi, as well as a six month package and development activities for up to 35,000 Burundians returning to the northeast of the country from camps in Tanzania;
2. General food distribution is designed to meet food gaps during the April/May and November/January lean season, for 75 days a year for poor households in the most vulnerable areas that are rain-fed;
3. Provide food assistance for Anti-Retroviral Therapy (ART) and TB patients, and for orphans and vulnerable children through the GOB Ministry of Health (MOH), UN agencies, and NGOs;
4. Provide an individual ration of institutional feeding 360 days per year for 4,000 people in medical and social centers, including orphans, handicapped and chronically ill;
5. Food for assets cash and voucher programs for up to 34,000 poor households to improve their livelihood opportunities, and Food For Training (FFT) over three months for up to 6,000 persons;

[3] WFP Protracted Relief and Recovery Operation Burundi 10528.1

6. School feeding of up to 250 primary schools for 190 days per year, where those attending school in the morning will receive porridge and those in the afternoon will receive a cooked meal. No take home rations are planned;
7. In partnership with the GOB, World Health Organization (WHO), United Nations Population Fund (UNFPA), and United Nations Children's Fund (UNICEF), therapeutic feeding centers and mother-child health and nutrition programs will be supported. Underweight pregnant and lactating women will receive rations for six months before delivery and three months after. Take home rations will be provided to mothers attending health/nutrition centers. Moderately malnourished children will receive individual rations.

WFP expects to reach 1.1 million beneficiaries per year at a cost of approximately US$70 million per year. WFP began implementation of a portion of this program in January 2009, details of which are outlined in Annex VII.

Chapter 4. Monetization Analysis

4.1. Introduction

To prioritize potential commodities for monetization analysis, trade data were analyzed to identify those products that were consistently imported in sufficient quantity and value to meet the administrative funding requirements of a PM2A program. Commodities were considered for monetization based on the following criteria:

- Eligibility for export from the US;
- Eligibility for import to the recipient country;
- Significance of domestic demand;
- Domestic supply shortfalls are filled through commercial imports and food aid;
- Presence of adequate competition for the commodities; and
- Expectations that fair market prices can be obtained.[4]

A review of trade data revealed three commodities that Burundi imports in sufficient quantity and value to meet the administrative funding requirements of a PM2A program: wheat, maize, and vegetable oil. See table below for the volume and value of these imports for the period 2004-2008. This Bellmon analysis therefore considered these three commodities as possible candidates for monetization. Individual commodities are discussed in greater detail below.

Table 2. Primary Food Commodity Imports, 2004-2008*

Commodity	2004 US$	2004 MT	2005 US$	2005 MT	2006 US$	2006 MT	2007 US$	2007 MT	2008 US$	2008 MT	5 year Average (USD$)	5 year Average (MT)
Maize (grain and flour)	3,400,529	12,491	2,592,604	8,759	294,381	989	3,368,873	12,086	2,146,775	8,133	2,360,632	8,492
Oil (multiple varetities)	1,181,407	1,407	810,233	1,239	1,424,367	1,824	3,045,976	2,873	3,988,267	3,955	2,090,050	2,260
Wheat (grain and flour)	992,610	3,698	710,262	2,141	1,671,573	4,342	2,395,004	5,823	2,717,352	8,112	1,697,367	4,823
Rice (multiple varieties)	530	4	240,671	547	2,857,312	7,099	2,768,209	7,084	154,727	466	1,204,290	3,040
Grand Total	5,552,071	17,507	4,303,868	12,589	6,247,633	14,254	11,567,412	27,817	9,007,121	20,666	7,335,621	18,567

Source: Comtrade (figures updated 9/22/2010)

*Commodities included in groups above:
Maize
H1-100590 - Maize except seed corn
H1-110220 - Maize (corn) flour
H1-110423 - Maize (corn), hulled, pearled, sliced or kibbled
Oil

[4] A fair market price is defined as the price a commercial importer would be required to pay on the open market for a comparable commodity of a comparable quality. This price is known as the import parity price (IPP)). By ensuring the sales price obtained is at or near IPP, Cooperating Sponsors help to ensure the monetized commodity does not undercut prices offered by sellers' of similar commodities, which could disrupt markets and normal trade patterns.

H1-150710 - Soya-bean oil crude, whether or not degummed
H1-150790 - Refined soya-bean oil, not chemically modified
H1-150810 - Ground-nut oil, crude
H1-150890 - Refined ground-nut oil not chemically modified
H1-151110 - Palm oil, crude
H1-151190 - Palm oil or fractions simply refined
H1-151211 - Sunflower-seed or safflower oil, crude
H1-151219 - Sunflower or safflower oil,fractions simply refined
H1-151229 - Cotton-seed or fractions simply refined
H1-151311 - Coconut (copra) oil crude
H1-151319 - Coconut (copra) oil or fractions simply refined
H1-151321 - Palm kernel or babassu oil, crude
H1-151329 - Palm kernel & babassu oil, fractions, simply refined
H1-151521 - Maize oil crude
H1-151529 - Maize oil, fractions, refined not chemically modified
H1-151550 - Sesame oil or fractions not chemically modified
H1-151590 - Veg fats, oils nes, fractions, not chemically modified
Wheat
H1-100110 - Durum wheat
H1-100190 - Wheat except durum wheat, and meslin[5]
H1-110100 - Wheat or meslin flour
Rice
H1-100610 - Rice in the husk (paddy or rough)
H1-100620 - Rice, husked (brown)
H1-100630 - Rice, semi-milled or wholly milled
H1-100640 - Rice, broken
H1-110230 - Rice flour

4.2. In-Country Monetization

Key commodities evaluated for in-country monetization included maize, edible oils, and wheat.

Tubers (cassava and sweet potato), pulses (groundnuts and beans), and cereals (maize and corn) are the most important staple foods, and are produced by nearly all farm families in Burundi.

Production of maize has remained relatively stable, from an average of 121,000 MT in 2004 to an estimated 127,000 MT in 2007 (FAO). During the same period, volumes for imported maize and maize flour began relatively strong at approximately 12,500 MT, dipped to 990 MT in 2006, and rebounded to 12,100 MT in 2007 and 8,130 MT in 2008; these imports have been primarily supplied by Uganda (85 percent) and Tanzania (14 percent) in the past five years. Food aid imports of maize and maize flour average over three times the amount sold commercially (40,000 MT per year are imported[6], versus 8,500 MT sold commercially). Total average consumption of maize is estimated at 170,000 MT per year. Monetizing 10 percent of estimated annual imports would generate only US$280,500 at current IPP. [7]

Unrefined palm oil is the traditional cooking oil used daily in the Burundi diet. FAO estimates that average local production is approximately 2,800 MT per year.[8] Most palm oil production is artisanal in rural areas and therefore consumption is difficult to estimate accurately. Estimated annual demand is 10-11,000 MT per year. SAVONAR, a local producer/refiner, produces an estimated 2,400 MT of oil per year, and supplies WFP with some of their annual edible oil needs. There is still a deficit of supply that is met through commercial imports of 2,000 MT of palm oil annually, valued at US$2 million, which primarily comes from Uganda (40 percent),

[5] Note that 2008 figures for H1-100190 “Wheat except durum wheat, and meslin” are from mirror data, 6,226 MT, valued at US$1,442,459. All other data from chart are from Burundi import data as reported in Comtrade.
[6] See table in annexes on Historical Food Aid Distribution USAID, USDA, WFP (MT).
[7] At the rate of US$230, as listed in the USAID commodity calculator, plus US$100 for inland transportation (approximation for Uganda), multiplied by 850 (i.e., 10 percent of estimated commercial imports of 8,500 MT of maize and maize flour).
[8] 20,000 MT of palm nuts at a conversion rate of 14 percent.

Malaysia (26 percent), and Tanzania (18 percent), and by 3,500 MT of vegetable oil brought in annually through food aid programs. Depending on the level of substitution of vegetable oil for palm oil in local diets, Cooperating Sponsors would be able to monetize up to 10 percent of commercial imports of oil (226 MT[9]), which could generate US$343,200.[10] However, these would likely compete against duty free imports coming from Uganda, an LIFDC country, and it seems unlikely that US vegetable oil would be competitive given the much shorter transportation route and duty free status of Ugandan imports. Trade data do not indicate any US vegetable oil on the Burundi market, which would further suggest this.

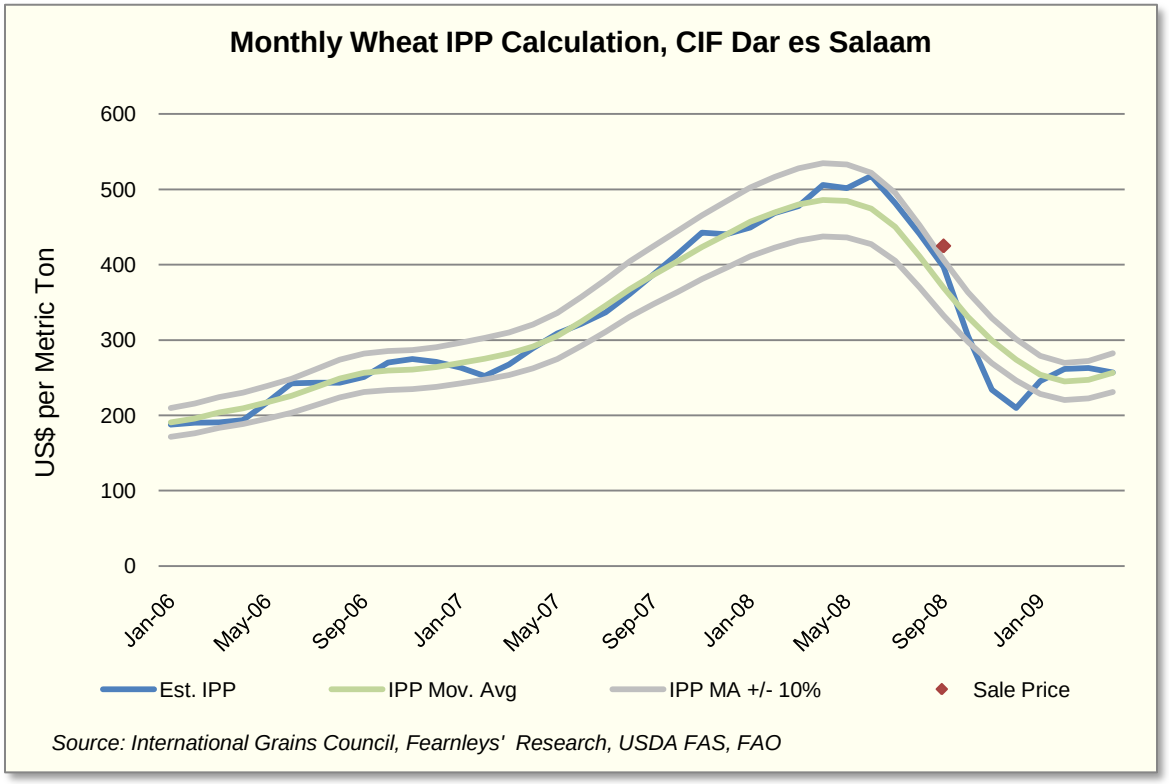
Wheat flour is an important product for Burundi's small urban population. There are two main wheat millers in the country, MINOLACS and FARISANA, which produce flour for the baking industry in urban areas of the country. Wheat is also grown domestically, but the varieties produced are of low quality and not preferred by the baking industry. Local wheat grain is most commonly used in a porridge made of local wheat grain, sorghum, soybean, and finger millet. FAO estimates that the annual production of wheat ranges from 7-8,000 MT and is cultivated by less than six percent of the country's farmers. Commercial imports of wheat and wheat flour combined averaged 4,823 MT per year (valued at US$1.70 million) over the past five years, with grain coming primarily from the USA, Canada and Uganda and flour from Uganda and Tanzania. Consumption data are very difficult to estimate given the lack of good trade data and Burundi's active informal trade with the DRC. Using production and trade data, consumption is estimated at 11-12,000 MT/year. Monetizing 10 percent of the five year average of wheat imports would generate little more than US$125,000 at current IPP[11].

[9] As per BEST current monetization methodology recommending 10 percent sale of a country's imports of a commodity.

[10] At the commodity calculator rate of US$1,400 for refined bulk vegetable oil. Assuming inland transportation as per the 2007 Bellmon at US$122/MT (p.34: US$2.26/20L, or US$0.113/L . At a density of SG 0.924, there are 1082.25 L of Palm Oil in 1000 MT. At a cost of US$0.113/L, inland shipping would cost approximately US$122./MT). Uganda pays no duty on exports of oil wholly produced in country, or where the processing of exported goods has added at least 35% of the ex-factory value of the product, as per COMESA Rules of Origin guidelines (available online at http://about.comesa.int/attachments/059_Protocol_on_the_Rules_of_Origin.pdf), This gives a total of US$1522, or proceeds of about US$344,000.

[11] The five year average for wheat imports equals 4,823MT (3,141 MT of wheat, plus 1,683 MT of wheat flour) . At the current IPP rate of US$260.32 (equalling the average of the last three months of calculated IPP as detailed in Annex IV), the sale of 10 percent of that figure, or 482 MT of wheat, would generate US$125,474. Even factoring in the conversion rate for wheat to wheat flour (approximately ¼ of the volume of wheat grain is lost in the milling process; 1,683 MT of wheat flour would require 2,243 MT of wheat. The total wheat market would be 5,384 MT and not 4,823 MT); 10 percent of this market would equal 538 MT, and multiplied by US$260.32 equals US$140,052.

Figure 1. Monthly Wheat IPP Calculation



In August 2008, CRS tendered the sale of 4,310 MT of PL 480 HRWW which was bid on by both operating flour mills. The sales agreement was signed August 28th for November delivery CIF Dar es Salaam. The shipment was divided equally between the millers, and price paid was US$425/MT using a commercial contract requiring a letter of credit, generating US$1.83 million for CRS's program. This is slightly above estimated IPP at the time, which is consistent with the highly volatile pricing situation at the time on international markets (see Figure 1 and Annex IV). At the time of delivery in November 2008, wheat prices had declined considerably but both mills honored their contract agreement and CRS was paid in full. CRS reports that both mills, MINOLACS and FARISANA, would purchase an additional 5,000 MT of HRWW in 2009.

While monetization can and does provide an important source of high-quality commodity, potentially at fair market prices, and allows buyers to pay in local currency (saving scarce foreign exchange), the amount of wheat monetized by CRS in 2008 (4,310 MT) exceeds the annual average importation of wheat and wheat flour into Burundi (five year average 4,823 MT/yr), and is 40 percent of the total estimated annual consumption of 11-12,000 MT. Although the price paid in 2008 reflects the IPP at the time, and actually exceeded market prices at the time of delivery three months later, monetizing this volume of wheat is likely to substantially disrupt normal trading patterns, particularly if monetizations of this volume are conducted on a

regular basis. Such a large volume also runs the risk of introducing price distortion if future tenders are below IPP. A reasonable percentage of average commercial imports – 482 MT -- would generate insufficient revenue to use monetization of Title II wheat to fund PM2A activities. Therefore, wheat does not appear to be a highly-suitable commodity for the purposes of in-country monetization.

In summary, Burundi is a very small country which, because of civil unrest during the past decade, has limited purchasing power and, as a consequence, a very limited market for monetization. For these reasons, BEST recommends that regional monetization be considered as an alternative.

4.3. Regional Monetization

When competition in a commodity market is severely limited, monetization activities in that market run the risk of introducing or intensifying market distortions, reinforcing those factors which frustrate the development of an open and fully competitive market, thereby contributing to either excessive profits or barriers to entry. By denying producers and consumers the opportunity to operate within a competitive market, the monetization activity over time could lead to reduced national economic efficiency and assign indeterminate costs to producers and consumers. Monetization in such a market would be contrary to the legal prescription of the US agricultural legislation which requires that monetization does not introduce local market or production disincentives.

Regional monetization (RM), or third-country monetization, can offer a legally-compliant alternative for Cooperating Sponsors who find themselves operating in a country with less than fully competitive domestic commodity markets, or where markets handle insufficient volumes to justify monetization with a goal of raising funds for development programming. RM provides cooperating sponsors with the option of selling into a market where there is sufficient competition among buyers in order to increase the likelihood that bids will be at or near import parity. With competition, there is increased assurance that the monetization will not distort the market and will generate higher revenues than if the monetization is conducted in a domestic market with limited or no competition. RM can generate greater revenue for food security activities and thereby increase the efficiencies of the FFP program. It also provides the Cooperating Sponsors with a fallback position if a commodity that was initially recommended for monetization becomes unviable at a later date due to changing market or policy conditions.

Because of highly-limited competition and low imports of likely Title II commodities in the Burundi market, RM is a reasonable option.

FFP 2009 Guidelines

Monetization in the recipient country is preferred over monetization in a "third" country, a country where the food security activities will not be take place. If it is not feasible to monetize in the country where proceeds will be utilized, monetization may be carried out in another LIFDC in the region, i.e. "third country". A list of low-income food-deficit countries (LIFDCs) can be found on FAO's web site at http://www.fao.org/countryprofiles/lifdc.asp?lang=en. If the LIFDC option is not feasible, then monetization may take place in a U.N. classified, least-developed country (LDC) in the region at http://www.un.org/special-rep/ohrlls/ldc/list.htm. In the case of "third country" sales, the USAID Mission and/or US Embassy in both the program country and the monetization country must endorse the plan.'

The appropriate third country or regional market is that market in which one may expect to receive a price for a commodity that is reflective of the international price. As the final destination of the commodities sold is indeterminate, the relevant reference to ensure that the Bellmon "market" conditions are satisfied is that the final negotiated price is comparable to the import price for that market. In addition, the port facilities of the selected market platform need to be sufficient to physically accommodate the commodities.

Monetization in a relatively large port city is preferred because inland freight and other costs will be assumed by the buyer. The preferred currency in which the transaction would be conducted would be specified in the offer. Based on the above criteria, the following products and markets can be considered for RM:

Table 3. Potential Products and Markets for Regional Monetization

	Mombasa, Kenya MT MT	Mombasa, Kenya $000s	Mozambique Ports MT	Mozambique Ports $000s	Dar Es Salaam, Tanzania MT	Dar Es Salaam, Tanzania $000s
Total Annual Import Market*	1,725,952	607,396	743,080	318,324	1,034,552	335,272
Wheat	844,558	198,126	280,425	63,569	623,732	139,393
Rice	314,899	81,604	258,645	117,527	62,501	12,995
Vegetable Oil**	564,531	323,398	180,119	96,849	347,070	182,068
Milk Powder	1,964	4,268	23,890	40,379	1,249	817
LIFDC	✓		✓		✓	
Port City	✓		✓		✓	
No FE Restrictions	✓		✓		✓	
Adequate Port Facilities	✓		✓		✓	
No Significant Security Issues	☐		✓		✓	

Source: UN Comtrade
**Excluding U.S- sourced food aid*
***Average 91 percent palm oil*

If RM is selected as an option, a widely-advertised competitive procurement using newspapers, the internet, and radio is recommended. Advertisement should be explicit regarding commodity specifications, delivery time range and transaction location, payment terms, and required currency. An auction process using a commodity exchange should be considered. Finally, both the Mission Director of the RM country and the MYAP country must endorse the monetization.

Chapter 5. Distribution Analysis

5.1. Why Would Food Aid Introduce a Substantial Disincentive to Local Production And Markets?

The "Bellmon Amendment" requires assurance that a proposed food aid program will not result in a substantial disincentive to or interference with domestic production or marketing in that country. The extent to which *distributed* food aid has the potential to result in disincentive to local production or disrupt markets rests fundamentally on whether or not proposed food aid would represent "additional consumption" for beneficiary households, i.e., food consumption which would not have occurred in the absence of the food aid distribution program. If the food aid transfers exceed household's perceived needs, the household is more likely to sell the food aid, reduce market purchases, and/or increase household farm sales. Such a response could lower market prices and/or reduce local incentives to production.

5.2. The Opportunities and Challenges of PM2A

PM2A presents both an opportunity for long-term human capital investment and a unique challenge to avoid introducing possible disincentives in the short- to medium-term. Because the key targeting criteria is based on a child's age and a women's physiological status rather than on an estimated household food deficit, such a program has greater potential to provide food aid to households for whom the food aid would not represent additional consumption. Initial geographic targeting of areas with a greater proportion of food-deficit households will help to avoid disrupting local production and markets.[12]

5.3. How Can We Assess Additionality In Burundi?

This report relies on Food Consumption Scores (FCS) as the proxy indicator of additionality. The FCSs are the best available indicators of the relative absorptive capacity of food aid on a sub-national basis for Burundi, which is important to inform initial geographic targeting given the nature of the PM2A program.[13] The FCS is not a quantitative measure of any nutrition gap, which could then be compared with the ration under the proposed food aid program to determine by how much the 'nutrition gap' might be filled (or potentially overfilled) under the program. However, it does provide a snapshot of both the frequency and diversity of household staple consumption and is, therefore, a reasonable proxy indicator of the availability and access dimensions of food security and, to a lesser extent, the utilization dimension.

[12] Please see Annex V for a more detailed discussion of the methodology used to assess the potential impact of a proposed food aid distribution program, including other possible proxy indicators.
[13] This analysis draws primarily upon qualitative and quantitative data, including the FCS measures, from the most recent WFP Comprehensive Food Security and Vulnerability Analysis (CFSVA 2008). Note that the Mairie de Bujumbura was excluded from study because the CFSVA was designed to focus on only rural areas.

Through sample surveys of households throughout Burundi's 16 rural provinces, seven-day recalls of food consumption provide an indicator of household food consumption during the main 2008 harvest season ("season B"), the time of survey implementation.[14] The weighted FCS reflects both dietary diversity and frequency of consumption of food items.[15] The survey which derived the FCS reported here was conducted during a favorable harvest period. Therefore, households identified as food insecure using Poor FCS can reasonably be considered to suffer from chronic household food deficits since, even in a favorable harvest period, these households were consuming very poor diets. About five percent of all rural households fall into this classification. Households identified as food insecure using Borderline FCS can reasonably be considered as vulnerable. About 27 percent of all rural households in Burundi fall into the Borderline classification.[16] Taken together, households with either Poor or Borderline FCS, collectively referred to as "Unacceptable FCS," account for just over 33 percent of all rural households.

Chronic malnutrition rates in children under five, particularly stunting (low height-for-age), are a potential indicator of chronic food deficits. Malnutrition rates are high throughout Burundi, averaging more than 50 percent of the under-five population nationally. However, province-specific malnutrition rates are presented for illustrative rather than analytical purposes herein for two reasons:

(1) According to the only source of province-specific rates, differences across provinces are not statistically significant and, therefore, such rates cannot inform geographic targeting from a Bellmon perspective;

(2) Malnutrition rates may reflect either inadequate intake, malabsorption due to infectious disease, or some combination of both. To the extent rates reflect disease prevalence more than inadequate intake, any conclusions drawn from such rates will be an inaccurate reflection of household food deficits.

With some regional variation, tubers (sweet potato and cassava) are the base of the local diet in Burundi, supplemented with some vegetables, cereals (mainly corn and sorghum), and vegetable oil. A Poor FCS implies less than daily consumption of staples and vegetables. A Borderline FCS implies slightly more frequent consumption of all staples, with the most important increase in consumption of pulses.[17]

An important consideration in determining relative absorptive capacity at the sub-national level is the presence of ongoing food aid and cash transfer programs. Both the amount of in-kind aid and the timing of distribution must

[14] Burundi has four seasons: two wet and two dry, which correspond to two main agricultural production periods. The 2008 CFSVA found "Season A" contributes an average of 40 percent of production, while Season B contributes just over 50 percent. Production during a third season, Season C, is possible for households with access to marshland but contributes only about 10 percent to total production for those households with access.

[15] Food security is founded on three fundamental elements: adequate food availability, adequate access to food and appropriate food utilization. The CFSVA proxies food security by food consumption score, which is a weighted score of dietary diversity and intake (some measure of availability and access). Because the present analysis seeks to capture a measure of 'additionality' so as to assess the potential disincentive effect of a proposed food aid distribution program, Food Consumption Score is the best available indicator. See CFSVA 2008, pp51-54, for further details of how the FCS is calculated.

[16] Humanitarian Practice Network classification of Food Consumption Scores.

[17] The CFSVA found: 'On average, households with a poor FCS consumed tubers five days a week, vegetables two days a week, cereals two days a week and oil one day a week (p52)." An increase in FCS is most often associated with a rapid increase in consumption of pulses (groundnuts and beans). The study found that only when the frequency of consumption of pulses reached six days per week did consumption of milk, fruits or meat increase.

be considered to properly account for the likely magnitude of food deficits throughout the year, and any surplus which might be generated by unintended errors in targeting. Annex XII provides an overview of all existing food aid and cash transfer program within five representative provinces.

Descriptive analyses of the ways in which households secure their livelihoods, and their varying degrees of vulnerability to external shocks, provide critical context to a discussion of the potential household responses to the receipt of food aid.[18] Annex VI provides a general description of Burundi's livelihood zones and the various livelihood strategies commonly found throughout rural areas, characterized in terms of average wealth, sources of income and food, expenditure, and level of food security. Other factors that can affect food security, such as shocks and vulnerable populations, are also considered.

5.4. Beneficiary Coverage Under A Proposed PM2A Program in Burundi

Likely parameters of a PM2A program (including ration size and composition) were used to estimate the number of household rations available under various levels of funding. Based on the assumption of one child age six to 23 months and one pregnant or lactating mother per household,[19] the monthly cost of a single household ration in Burundi is US$33.35.[20] Given these costs, a US$10 million program in Burundi with all funding devoted to distributed food aid rations (no monetization) could target 24,988 households per year on a 12-month basis. A US$9 million food aid program in Burundi (US$1 million in monetization) could target 22,489 households per year on a 12-month basis, while US$7.5 million spent on food aid could target 18,741 households per year.

[18] The descriptive analysis is primarily based upon qualitative and quantitative data from the most recent WFP Comprehensive Food Security and Vulnerability Analysis (CFSVA 2008), which divides the rural population of Burundi according to livelihood strategies, each of which have varying levels of vulnerability to different external shocks which contribute, in varying degrees, to different degrees of food insecurity. The extent to which each livelihood strategy is represented within each province is presented and the potential level of food insecurity for the province is determined according to the nature and frequency of the shocks expected in that area. In addition to the impact of livelihood strategy, food insecurity in a province can be affected by other factors such as the number of returnees and the efficiency of food utilisation due to intra-household food allocation decisions and factors such as disease that affect nutrient absorption. These factors must be superimposed on the conclusions drawn from the livelihoods analyses.

[19] Estimates of the numbers of children age six to 23 months and pregnant and/or lactating mothers are based on demographic figures from the 2008 census and the CFSVA. The population of six to 23 month olds and pregnant and/or lactating mothers is estimated as eight percent of the overall population based on the following assumptions and calculations: (1) an estimated eight percent of the population is below two years of age; (2) per PM2A guidelines, infants between zero to five months are excluded as beneficiaries to encourage exclusive breastfeeding; (3) assuming uniform distribution of the population under two, just under two percent of the population is age zero to five months; (4) assuming a zero or negligible neonatal mortality rate, the population of infants zero to five months is approximately equal to the population of pregnant women. Based on these assumptions, the total population of children under two years is a fair estimate of the number of children six to 23 months and pregnant women in the population.

[20] Two notes should be made regarding the calculation of monthly ration cost. One, for the purposes of the BEST analysis, costs associated with the recuperative component (targeting 24-59 months old with Severe Acute Malnutrition (SAM)) are excluded because the best information at the time of report writing is that funding for the recuperative component of the PM2A program will likely come from a source other than the MYAP because it involves purchase of Ready-to-Use Therapeutic Feeding rations not currently available from US manufacturers (Bergeron 2009, personal communication). Two, to the extent households do not fit the profile of having one six to 23 month old child and one pregnant or lactating mother, the monthly cost of a single household ration will vary which, in turn, will affect the number of rations available for distribution. For example, for households with no children six to 23 mo but one pregnant/lactating mother, the monthly cost of a single household ration would be US$19.87. For households with two children six to 23 months and one pregnant/lactating mother, the monthly cost of a single household ration would be US$46.84. We make the simplifying assumption that the monthly cost for a household ration is uniform because, at the time of report writing, no demographic data is available to suggest another assumption would be more reasonable.

5.5. Assessment of Local Impact

Because of the localized nature of the impact of distributed food aid and the vulnerability of small markets to disruptions and small farmers to production disincentives, even quantities which may appear insignificant when compared to a country's total food staple consumption can have a major impact on markets and production at the local level. A comparison of available rations with each target province's estimated number of food insecure households (based on both Poor and Unacceptable FCS) allows for assessment of potential absorptive capacity at a relatively localized level.

5.6. Examples of Potential Local Impact

As of the date of this report, beneficiary targeting had not been completed so the specific provinces in which Cooperating Sponsors might implement a PM2A program are not available for consideration in the BEST pre-MYAP analysis. Nonetheless, five provinces (Cibitoke, Kirundo, Ruyigi, Cankuzo, and Muyinga) were selected for more in-depth analysis as examples because FFP guidance suggests they represent likely areas for program implementation on the basis of *one or more* of the following criteria: (1) high levels of food insecurity and/or malnutrition; (2) the catchment area's absorptive capacity of food; (3) relative social stability suggesting long term development programs will have a chance to flourish; (4) existence of minimal services necessary for the successful implementation of a PM2A program; and (5) the capacity for leveraging with other activities, such as food security and/or water and sanitation interventions.

The following example uses these five provinces to underscore the importance of considering both the overall program scale and relative allocation of resources across geographic areas when undertaking the initial geographic targeting. Table 4 reports the estimated number of eligible food insecure households in these five select provinces.

Table 4. Number of Eligible Food Insecure Households in Five Select Provinces

Province	# of eligible HHs with poor FCS	# eligible HHs with Unacceptable FCS
Cankuzo	1541	6022
Cibitoke	2837	13377
Kirundo	1120	12726
Muyinga	4351	15834
Ruyigi	1411	8048

Source: Fintrac/BEST's calculations based on 2008 CFSVA and 2008 Census

Table 5 provides a comparison of available rations under the three possible funding levels (US$10 million, US$9 million and US$7.5 million spent directly on food rations) and four possible concentration levels (100 percent, 50 percent, 33 percent and 25 percent resource concentration within a given province) relative to the number of eligible food insecure households.

Table 5. Available Number of Rations Under Three Funding Levels and Four Concentration Levels, Relative to the Number of Eligible Food Insecure Households within Selected Provinces

PM2A Funding for Food Aid	% food aid concentrated w/in province	CIBITOKE coverage (poor FCS)	CIBITOKE coverage (unacceptable FCS)	KIRUNDO coverage (poor FCS)	KIRUNDO coverage (unacceptable FCS)	RUYIGI coverage (poor FCS)	RUYIGI coverage (unacceptable FCS)	CANKUZO coverage (poor FCS)	CANKUZO coverage (unacceptable FCS)	MUYINGA coverage (poor FCS)	MUYINGA coverage (unacceptable FCS)
$10 million	100%	881%	187%	2231%	196%	1771%	310%	1622%	415%	574%	158%
$10 million	50%	440%	93%	1116%	98%	885%	155%	811%	207%	287%	79%
$10 million	33%	291%	62%	736%	65%	584%	102%	535%	137%	190%	47%
$10 million	25%	220%	47%	558%	49%	443%	78%	405%	104%	144%	36%
$9 million	100%	793%	168%	2008%	177%	1594%	279%	1459%	373%	517%	142%
$9 million	50%	396%	84%	1004%	88%	797%	140%	730%	187%	258%	71%
$9 million	33%	262%	55%	663%	58%	526%	92%	482%	123%	171%	47%
$9 million	25%	198%	42%	502%	44%	398%	70%	365%	93%	129%	36%
$7.5 million	100%	661%	140%	1673%	147%	1328%	233%	1216%	311%	431%	118%
$7.5 million	50%	330%	70%	837%	74%	664%	116%	608%	156%	215%	59%
$7.5 million	33%	218%	46%	552%	49%	438%	77%	401%	103%	142%	39%
$7.5 million	25%	165%	35%	418%	37%	332%	58%	304%	78%	108%	30%

Source: Fintrac/BEST's calculations based on 2008 CFSVA and 2008 Census

"Coverage" is defined as the number of household rations divided by the number of eligible food insecure households (and expressed as a percentage), with food insecurity defined alternately as either Poor FCS or Unacceptable FCS.

Any coverage over 100 percent would be indicative of poor targeting; that is, while households might be eligible based on a child's age or a woman's pregnancy/lactating status, such households would not be considered food insecure (as defined within this report) and would be more likely to sell the food aid, thus reducing their market purchases or household production.

Based on the above analysis, if the entire US$10 million program is in distributed food rations (no monetization), a PM2A program implemented in any one or combination of these provinces would be most accurately targeted (from a Bellmon perspective) if, for example:

- US$5 million, or half a US$10 million program, is directed to Cibitoke and the remaining US$5 million is directed to Muyinga because PM2A coverage in individual provinces would closely align with the number of food insecure households eligible for a PM2A program;
- US$7.5 million is directed to either Cibitoke or Muyinga, and the remaining US$2.5 million directed to Kirundo; or
- US$5 million is directed to either Cibitoke, Kirundo or Muyinga province, and US$2.5 million each is directed to relatively stable communes within Cankuzo and Ruyigi

These findings are strengthened when additional indicators of food insecurity and/or potential for relative impact are considered. For example, while malnutrition rates are high throughout Burundi, among the five provinces under review, prevalence of stunting is highest in Cibitoke and Muyinga. In addition, existing program coverage appears least extensive in Cibitoke relative to the other four provinces under review, which suggests a higher relative absorptive capacity in terms of additional programs in Cibitoke. Annex XI provides an overview of existing food aid programs in these five provinces.

Moreover, while food security conditions have deteriorated or are expected to deteriorate in both Kirundo and Ruyigi, the underlying reasons in these areas are different and important to consider for success of a PM2A program. While both provinces face population movements, Kirundo is relatively more vulnerable to weather shocks while Ruyigi faces a larger influx of returnees/refugees which suggests a social instability not conducive to a PM2A program. Both Cankuzo and Muyinga also have sizable refugee/returnees populations. This appears to be a greater concern in Cankuzo, particularly in the eastern half of the province, relative to Muyinga, where the largest population appears primarily in the northernmost commune. To maximize the impact of a preventative nutrition intervention program, it is preferred if beneficiaries remain in the program for as long as feasible (preferably from early in the 2nd trimester of pregnancy through the end of the child's 23rd month of life). To the extent population movements make tracking and retention of beneficiaries more problematic, the long-term benefits of a PM2A program in areas with sizable refugee/returnee populations would not be maximized.

Additional indicators, such as livelihood strategies and relative reliance on markets of different livelihood groups, are discussed more fully in Annex VI and Annex VII.

5.7. National Snapshot and General Findings

A US$10 million program in Burundi with all funding devoted to distributed food aid rations (i.e., no monetization) could target nearly 25,000 households per year on a 12-month basis. A PM2A program in Burundi has two obvious competing approaches: either target many small but

geographically-disparate communities with a large percentage of chronically food insecure households, or focus interventions within a select group of provinces.

Logistical and programming considerations, which include the necessary presence of minimal services for successful program implementation, may warrant concentration of funds into select provinces. However, as shown in the province-specific analysis above, geographic concentration of distributed food aid increases the difficulty of effectively targeting communities with relatively larger percentages of food insecure households without increasing the likelihood that substantial disincentive effects will be introduced (even within provinces with relatively high levels of food insecurity such as Cibitoke). This underscores the importance of selecting the most food insecure communes or collines within each province for PM2A implementation, even when focusing on only a select number of provinces.

The table below provides an overview of the relative share and number of food insecure households which would be eligible to participate in a PM2A program based on the estimated number of households with either a pregnant/lactating mother or a child under two years of age. Provinces are ranked by percentage of food insecure households according to the definitions of food security used within this analysis.

The initial geographic targeting could allocate resources to cover approximately 25,000 households with eligible beneficiaries (assuming US$10 million is devoted to rations). After taking into account existing food aid and cash transfer programs, allocation of resources across a combination of provinces that most closely reaches this goal, without providing more coverage than is warranted given the number of eligible food insecure households, and which is targeted to the most food insecure communes or collines within each province, will help ensure the most efficient use of Title II resources while simultaneously assuring legislative compliance under the Bellmon amendment.

Table 6. Percent and Numbers of Food Insecure Households Which Could be Covered Under a PM2A Program in Burundi's Rural Provinces

Province	% HHs with poor FCS	% HHs with borderline FCS	% HHs with unacceptable FCS	% of children under 5 stunted (HAZ < -2 SD)	# eligible HHs with poor FCS	# eligible HHs with unacceptable FCS
Ngozi	8.2%	33.1%	41.3%	61.8%	4338	21850
Karusi	10.6%	30.4%	41.0%	46.8%	3672	14204
Cibitoke	7.7%	28.6%	36.3%	58.1%	2837	13377
Cankuzo	8.7%	25.3%	34.0%	44.9%	1541	6022
Muyinga	8.6%	22.7%	31.3%	56.6%	4351	15834
Kayanza	1.3%	29.7%	31.0%	56.7%	610	14535
Bubanza	3.8%	26.5%	30.3%	46.3%	1058	8440
Bujumbura Rural	6.0%	24.1%	30.1%	46.2%	2712	13607
Mwaro	2.6%	25.7%	28.3%	57.0%	560	6091

Province	% HHs with poor FCS	% HHs with borderline FCS	% HHs with unacceptable FCS	% of children under 5 stunted (HAZ < -2 SD)	# eligible HHs with poor FCS	# eligible HHs with unacceptable FCS
Ruyigi	4.4%	20.7%	25.1%	52.6%	1411	8048
Kirundo	2.2%	22.8%	25.0%	51.9%	1120	12726
Gitega	3.7%	18.4%	22.1%	53.2%	2117	12643
Rutana	3.1%	16.2%	19.3%	52.9%	834	5194
Muramyva	2.2%	16.0%	18.2%	50.4%	519	4294
Bururi	1.0%	7.8%	8.8%	50.9%	457	4019
Makamba	0.6%	7.1%	7.7%	49.5%	206	2642

Notes:

Provinces are listed in descending order based on the percentage of households with Unacceptable FCS.
HHs with either Poor or Borderline FCS are collectively referred to as "Unacceptable FCS".
The number of eligible HHs with a given FCS is an estimated 40% of the total number of HHs with that given FCS.
As reported, differences between provinces in stunting rates are not statistically significant (CFSVA 2008) and are provided for illustrative purposes only.

Finally, to best meet household food needs and avoid introducing disincentives, food aid should be delivered, to the greatest extent possible, during lean season months (especially during the peaks in February and October) when both market supply and household ability to draw on own production for consumption are at their lowest. Given that PM2A is a blanket distribution program, with a set monthly ration schedule, one option worth consideration would be to increase the ration size during the lean season and decrease the ration size during the harvest season.

Chapter 6. Adequacy of Ports, Distribution, and Storage

There is adequate port capacity in the Mombasa and Dar es Salaam ports, which are to deliver food aid to Burundi. Drawbacks include: 1) increasing piracy activity in the Horn that has disrupted US and other nations' food aid shipments to Mombasa, 2) transport to Burundi from either port is both time consuming and expensive, via road, railroad, and/or boat, 3) delivery from Dar es Salaam can take three months or more, 4) delivery from Mombasa, while less time consuming, is more expensive. There are adequate, clean, and secure storage facilities available in Bujumbura and, to a limited extent, up-country. See Annex II for further details.

Annex I. National Overview

I. i. Productivity and Wealth

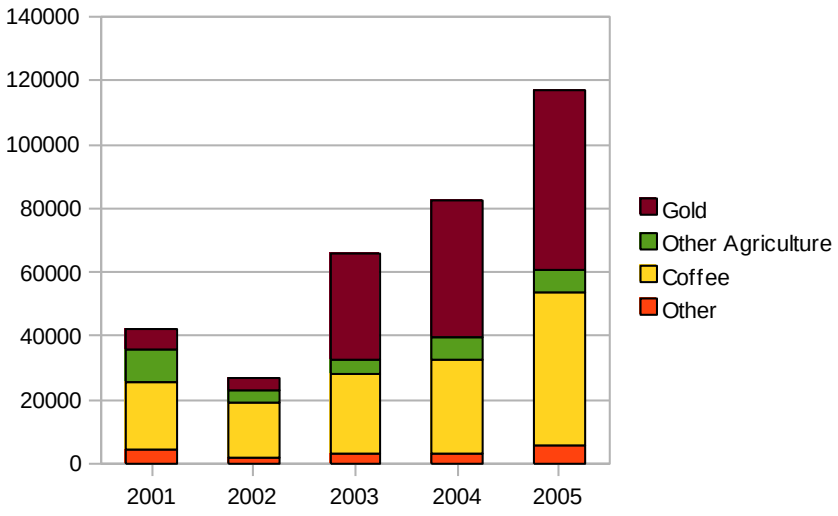
The economic development of Burundi has been constrained by recent conflict, which has limited investments in agriculture to the point where most of the country's economy is dominated by subsistence, rather than commercial, agriculture. The availability of inputs, both land and fertilizers, has been restricted so that yields have been low. Consistently high population growth of close to three percent has not been accompanied by increased investment or production. As a result, per capita productivity is no more than US$114 per annum, so that the GDP of Burundi in 2008 was US$912 million at official rates and US$3.1 billion on a Purchasing Power Parity (PPP) basis.

The GINI coefficient for Burundi was estimated in 1998 to be relatively low, at 0.42. This suggests that the concentration of wealth is fairly low and that the population as a whole is generally poor. At least five million people each produce no more than US$60 per annum at official rates or US$200 per annum at PPP.

I. ii. Trade

Burundi conducts only a small volume of trade. The country exports goods (mostly coffee and gold) valued at approximately US$120 million. In the past, coffee has been the main export, but with increasing political stability, gold exports have increased from 483 kg in 2002 to 4,313 kg in 2006, reflecting growing transshipment from neighboring DRC. Export earnings more than doubled between 2001 and 2005 and are summarized below.

Figure 1. Export Earnings, 2001 to 2005 (USD'000)



Source: Comtrade

Burundi's low level of exports is accompanied by restricted imports. Food imports, in particular, have been minimal. High transport costs for bulky food commodities place most imported foodstuffs beyond the reach of the majority of the population. Over the last five years, annual commercial imports of all cereals and cereal flours have not exceeded 35,000 MT.

Table 7. Imports of Cereals and Cereal Flours, 2004-2008

Commodity	2004 US$	2004 MT	2005 US$	2005 MT	2006 US$	2006 MT	2007 US$	2007 MT	2008 US$	2008 MT	5-Year Average US$	5-Year Average MT
Maize	2,994,103	11,346	2,333,038	8,183	34,310	217	3,179,063	11,474	771,827	3,760	1,862,468	6,996
Wheat	315,531	1,676	493,500	1,578	1,118,055	2,896	1,437,377	3,328	1,442,459	6,226	961,384	3,141
Rice	530	4	240,671	547	2,857,312	7,099	2,768,209	7,084	154,727	466	1,204,290	3,040
Other	136,467	299	29,090	53	38,821	127	1,637,564	2,857	11,119	2	370,612	668
Total Cereals	3,446,631	13,325	3,096,299	10,361	4,048,498	10,338	9,022,213	24,743	2,380,132	10,453	4,398,755	13,844
Maize Flour	383,385	1,053	209,632	479	260,071	773	179,160	563	1,374,948	4,373	481,439	1,448
Wheat Flour	677,115	2,022	216,762	563	553,518	1,446	957,627	2,495	1,274,893	1,887	735,983	1,683
Rice Flour	0	0	32	0	0	0	0	0	0	0	6	0
Other Flour	335,938	723	230,881	492	29,481	78	459,297	984	204,722	552	252,064	566
Total Flour	1,396,438	3,798	657,307	1,534	843,070	2,297	1,596,084	4,043	2,854,563	6,811	1,469,492	3,697
Total Cereals and Flours	4,843,069	17,123	3,753,606	11,895	4,891,568	12,635	10,618,297	28,786	5,234,695	17,264	5,868,247	17,541

Source: Comtrade

Commodities included in table above:

Grain
Maize
H1-100590 - Maize except seed corn
Wheat
H1-100190 - Wheat except durum wheat, and meslin[21]
H1-100110 - Durum wheat
Rice
H1-100620 - Rice, husked (brown)
H1-100630 - Rice, semi-milled or wholly milled
H1-100610 - Rice in the husk (paddy or rough)
H1-100640 - Rice, broken
Other
H1-100890 - Cereals unmilled nes
H1-100400 - Oats
H1-100830 - Canary seed
H1-100810 - Buckwheat
Flour
Wheat
H1-110100 - Wheat or meslin flour
H1-110311 - Wheat meal
Maize
H1-110220 - Maize (corn) flour
Other
H1-110290 - Cereal flour except wheat, meslin, rye, maize, rice
H1-110210 - Rye flour
Rice
H1-110230 - Rice flour

Imports have consistently exceeded exports in value and have been financed by external borrowing and donor assistance. This imbalance has led to a decline in the value of the Burundi franc (although with the liberalization of the currency market, the Burundi franc stabilized considerably in the last two years), and to continual inflation at an average annual rate of 11 percent, from 1993 onwards, such that the consumer price index (CPI) set at 100 in 1996 now exceeds 325.

[21] Note that import data for Wheat grain for 2008 are from mirror data. All other data are from Burundi import statistics.

I. iii. Agriculture

Agriculture in Burundi contributes 46 percent of GDP and employs 90 percent of the population. It is characterized by small-scale production on a subsistence basis, with commercial markets largely supplied by the surplus production of subsistence producers. There is very little production undertaken on a strictly commercial basis.

The level of productivity is low due to the absence of inputs and improved technologies. Crops consist primarily of beans, starchy tubers (including cassava, sweet potato, and taro), bananas, and cereals. The level of livestock ownership is low, and meat and livestock products are not widely available. The table below provides volumes of production of the main foodstuffs over the last five years.

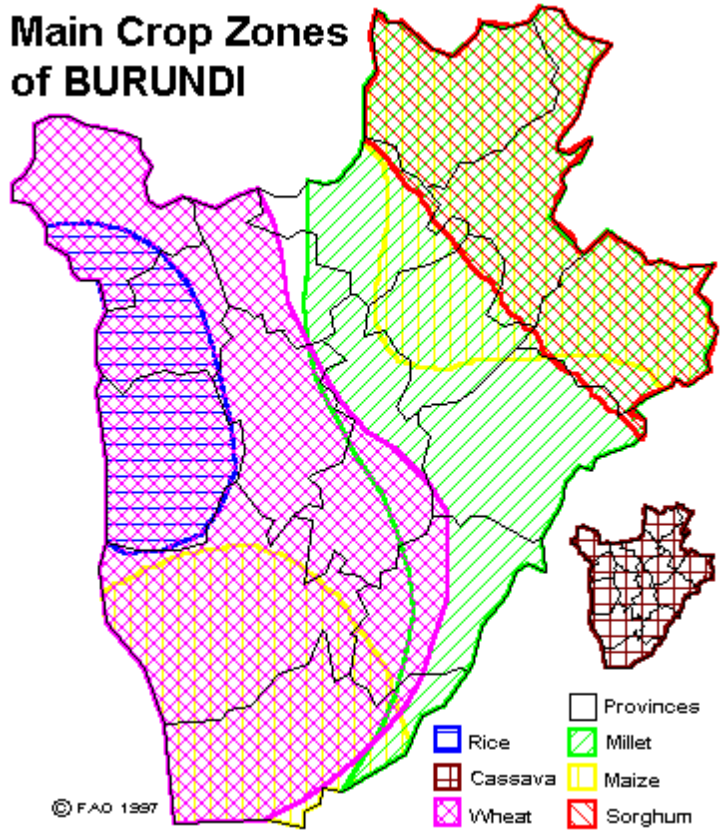
Table 8. Production of Main Food Commodities (MT'000)

Year	2004	2005	2006	2007	2008
Cereals	280	290	282	290	287
Legumes	252	250	238	241	222
Tubers and Roots	1,649	1,575	1,458	1,527	1,548
Bananas and Plantain	1,590	1,636	1,663	1,721	1,758
Total	3,771	3,751	3,641	3,779	3,813

Source: FAO/MINAGRIE

There are two harvest seasons, December-February (season A, which accounts for about 40 percent of annual production) and May-July (season B, which accounts for about 60 percent of annual production), and two planting seasons, September-October (A) and February-May (B). A third season (season C, which accounts for about 10 percent of annual production) is available to the small percentage households with access to marshland. See Annex IX for an overview of Burundi's seasonal calendar.

Figure 2. Main Crop Zones of Burundi



Source: FAO

The overall level of production in Burundi is adequate to supply 70 percent of dietary needs (based on the standard of 2,100 kcal/person/day). On this basis, an effective national deficit of a little over 500,000 MT of maize, or its nutritional equivalent, exists to be met by commercial imports and food aid. The level of commercial imports has not exceeded seven percent of this deficit, and food aid interventions have rarely contributed more than 13 percent, so that for the last five years the majority of the population has subsisted on less than 80 percent of standard nutritional requirements.

The situation has been exacerbated by large numbers of internally displaced people (IDPs) who have lost the means of production (land and household assets) and are obliged to seek casual work or to exist on the charity of the local community in order to survive. IDPs are particularly food insecure; thus, even in surplus production areas, some households may be food insecure.

With the onset of peace, the GOB has looked to stimulate investment (both domestic and foreign) in order to generate increased productivity. However, the 2008 World Bank Doing Business Indicators ranked Burundi 174th out of 178 countries. Measures are being taken to

improve the business environment, but it will take some time before the necessary investment is in place so that productivity can increase at a rate equivalent to or faster than population growth.

Overall, the economy of Burundi is characterized by a shortage of investment, a very low level of productivity, constant inflation, and low levels of exports and imports, i.e. low economic activity and thin markets. This has led to extreme, broad-based poverty and an inability either to grow enough food to meet national requirements or to purchase the balance required. The extent of the deficit has consistently exceeded donor imports, and although famines have been rare, chronic malnutrition has become widespread over large sections of the population.

The table below outlines tariffs and taxes.

Table 9. Tariffs and Taxes

	DDI (%)	TTR (%)	RAD (%)	DCO (%)	PFR (%)
2006- Wheat	5	17	0,5	5	4
2006- Vegetable Oil	5	17	0,5	0	4
2007- Wheat	5	17	0,5	5	4
2007- Vegetable Oil	5	17	0,5	0	4
2008- Wheat	5	17	0,5	5	4
2008- Vegetable Oil	5	17	0,5	0	4

Source: Ministry of Finance
Notes:
Food aid imports are not taxed.
DDI (Droit de douanes - Customs duty): Varies according to product and country of origin, is applied to CIF value.
Note that food imports from within the East Africa Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) are exempted.
TTR (Taxes de Transaction - transaction tax): 17% tax applied to combined value of CIF and DDI. Will be replaced by VAT of 18% in July 2009.
The VAT will have no exceptions.
RAD (Redevance administrative - Administrative Fee): Applied to CIF Value of import.
DCO (Droit de Compensation - Compensatory Duties): 5% tax applied to CIF value of import.
PFR (Prélèvement forfaitaire - Flat-rate deduction): Percentage withholding fee applied to CIF value of import + Customs duty. Exempted for importers that regularly pay tax.

Table 10. Issues Affecting Agriculture

AREA	POLICY	PRACTICE	IMPLICATIONS
TRADE & MARKETING POLICIES			
Pricing : Farm-gate	Pricing liberalized	Both parastatal institutions and private traders sell and buy at open market prices. GoB is in process of privatizing all the parastatals	Parastatal institutions tend to be buyers of last resort
Pricing : Retail	Pricing liberalized.	Parastatal retail is the same as the private sector	Majority of parastatals will soon be out of business
Import/Export Participation	No restrictions on imports or exports	Open import and export trade in all commodities	Both import and export trade is growing
Import/Export Duties	Reduction in duty levels	Maximum duty level is 40%	Under-invoicing is still common
Domestic Marketing	Liberalized	Liberalized	Domestic market structure is developing
Food Reserves	No strategic food reserve	No strategic food reserve	Burundi depends upon regional trade for national food security
Futures	No policy	Trade in futures does not exist in Burundi	Market not yet sufficiently mature to use futures
GMO	GMO commodities imported as	GMO commodities imported as	No implication

AREA	POLICY	PRACTICE	IMPLICATIONS
	food aid	food aid	
TRANSPORT			
Transport	Liberalized market	Liberalized Market	Burundi is able to take advantage of regional capacity
Transit Fee	To be reduced	Costs are prohibitive	Value of exports reduced, cost of imports increased
INPUT POLICIES			
Distribution	Liberalized	Liberalized but parastatals still participate	Fertilizer available from both parastatal and private sources
Pricing (subsidy)	Liberalized (no subsidy)	Cooperative fertilizer sold at market price	Supply is limited by the purchasing power of the buyers
MACRO POLICIES			
Foreign exchange	Open exchange at rate fixed by National Bank of Burundi	Foreign currencies are available in all the foreign exchange bureau	Access to foreign exchange is limited by the financial capacity of the traders
Foreign exchange facilities	All the banks trade foreign exchange	Exchange rate is higher in foreign exchange bureau than in the commercial banks in Bujumbura	Demand for foreign exchange is well balanced by the supply almost perfect equilibrium, only market sets exchange rate
Investment	Policy of encouraging FDI and domestic investment	FDI limited by civil insecurity , public and private domestic investment is encouraged	Recent GDP recovery is translated in real increase of prices
Credit	Credit systems are liberalized	Government-associated banks operate in conjunction with private banks. MFIs encouraged	Banking system is evolving well, MFIs is satisfied
Interest Rates	Fixed by market	Government-associated banks offer credit at low fixed rates, setting market for private banks. Only MFIs lend at above rate of inflation	Commercial credit is cheap but impossible to obtain
STRATEGIC FRAMEWORK			
Safety Net Programmes	GOB and donors have developed and implemented the Productive Safety Net Programme to protect assets of chronically impoverished	Safety Net overburdened by number of beneficiaries and hampered by inflation	Some progress has been made toward developing sustainable household food security
Longer-term Food/ Agricultural Sector Recovery Strategy	Agriculture seen as long -term engine of economic growth	Agricultural investment scarcely able to meet local demand, let alone stimulate further growth	Inadequate rural investment restricts level of output leading to persistent national food insecurity

Annex II. Distribution and Storage

Note: This information is taken from the WFP's Logistics Capacity Assessment for Burundi, 2008.

II. i. Transportation

As a small, land-locked country, Burundi's access to the coast is severely limited. The main ports for food aid deliveries to Burundi are Dar es Salaam, Tanzania, and Mombasa, Kenya. Dar es Salaam is a heavily congested port with waiting times for demurrage of one month or more. The situations in both ports have not changed significantly since the last update was issued in September 2007, with the notable exception of the recent increase in piracy. The most recent hijacking of one food aid ship destined for Mombasa, and the attempted hijacking of a second have increased the uncertainty of delivery to that port. US flag vessels are being cautioned to travel in convoys with military escort.

Once cargo is unloaded, transport to Burundi via the central corridor is either by railroad and road via Dodoma and Isaka Ngozi, or by railroad and lake via Dodoma and Kigoma. Freight offloaded from the port of Mombasa, Kenya can be transported via the northern corridor via rail or road to Kampala, and by road thereafter. There have been incidents of hijacking of barges of food aid on Lake Tanganyika. Tanzanian navy escorts have been used to deter this.

Current cost per MT of cargo ranges from US$125/MT to US$233/MT, as shown in the following table.

Table 11. Cost of Shipping per Metric Ton from Principle Ports

Port	Mode	US$/MT
Dar es Salaam	Rail/road	204
Dar es Salaam	Rail/lake	125
Mombasa via Kampala	Road	233
Mombasa via Kampala	Rail/road	190

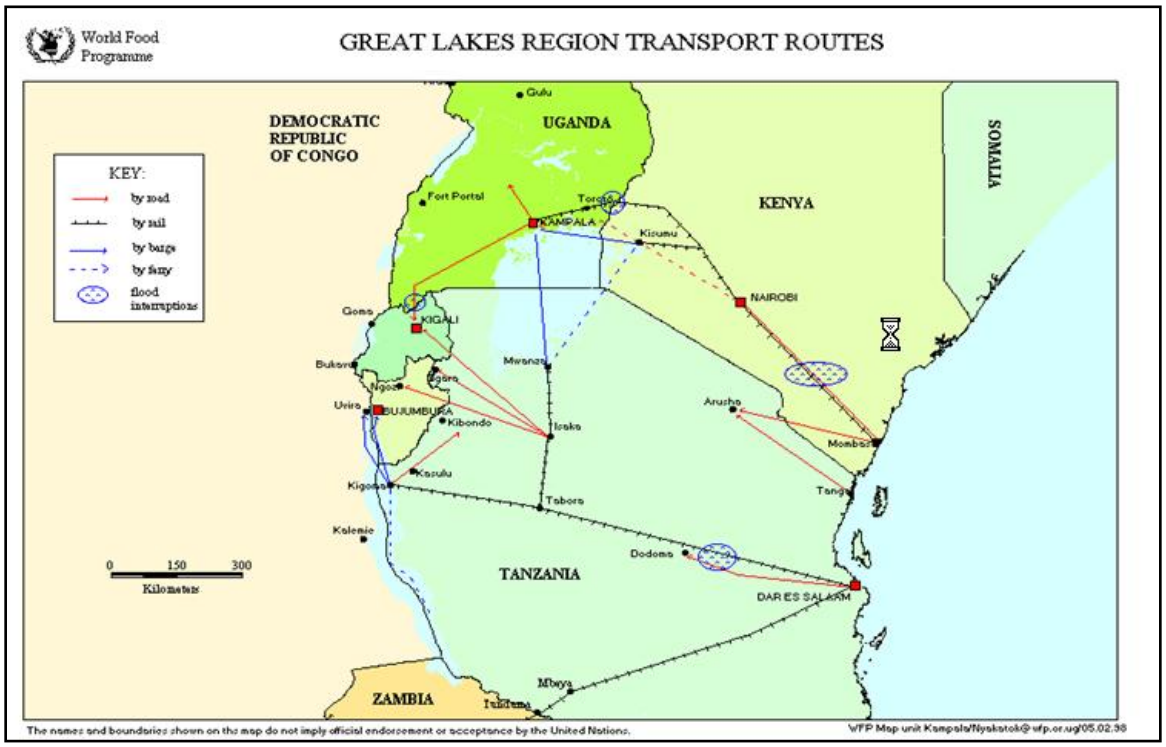
Source: WFP/Burundi

Any transport option that includes a rail link can take upwards of three months from the time commodity is offloaded from the ship to when it arrives in Bujumbura, primarily due to demand for rail service and lack of capacity. Transit time is cut significantly, and reliability of delivery increases if transport is exclusively by road; however, road transport is more expensive than rail or water. WFP reports that 80 percent of their food aid shipments arrive via Dar es Salaam and 20 percent via Mombasa. They report recent reactivation of a southern corridor route through Zambia so that they can take advantage of commodities from the South African market.

II. ii. Storage

In general, there is sufficient storage space in Burundi for food aid shipments. The storage is offered by the private and public sectors, WFP, and NGOs. Combined secure warehouse space in Bujumbura is sufficient for over 36,000 MT. There is an additional 10,000 MT in Ngozi, as well as smaller facilities elsewhere in the country that can accommodate 2,500 MT (Manama, Gitega, Muyinga, and Karuzi).

Figure 3. Transport Routes from Indian Ocean Ports to Bujumbura



Source: WFP

II.ii.i Commercial Storage

The total capacity of commercial storage in Burundi is 9,440 m^2. All buildings are in good condition.

Table 12. Commercial Storage by Location

Location	Capacity	Type[22]	Access[23]	Condition[24]
Bujumbura	2,200m^2	Building	Flat	Intact
Bujumbura	1,500m^2	Building	Flat	Intact

[22] Warehouse types: Open storage, container, rub-hall, silo, concrete, other, unspecified
[23] Warehouse Access: raised-siding, flat
[24] Warehouse conditions : appears intact, appears damaged, under construction/repair

Location	Capacity	Type[22]	Access[23]	Condition[24]
Bujumbura	2,090m^2	Building	Flat	Intact
Gitega	1,250m^2	Building	Flat	Intact
Ngozi	1,863m^2	Building	Flat	Intact
Ngozi	526m^2	Building	Flat	Intact

Source: WFP Burundi. Enquête de marches. Nov. 2007

II.ii.ii Storage Used by Humanitarian Organizations

Most CSs have storage on their premises for their projects. Some of the storage spaces are containers as well as buildings. GTZ has storage space of 20,000 m^3 for food and non-food items. IRC has storage space volume of about 1,500m^3 of storage containers on their premises in Bujumbura. The main WFP warehouses are situated in Bujumbura (9,000 MT) and Ngozi (8,500 MT). The Bujumbura warehouse is secured and managed by trained staff. The warehouse managed by UNICEF in Bujumbura has a combined closed capacity of approximately 2,000 m^2 divided in five segregated units.

There are other warehouses at various project sites that has been outsourced and managed by private companies, including:

- Makamba (700MT)
- Gitega (1,000MT)
- Muyinga (500MT)
- Karuzi (300MT)

These storage spaces are available for rent and are associated with the airport and lake port of Bujumbura management.

Table 13. Available Storage Space

Location	Capacity MT / m² / m³	Type	Access	Condition
Bujumbura Lake Port	18,560m2	Building	Flat and raised sliding	Intact
Airport of Bujumbura	2,006m2	Building	Flat and raised sliding	Intact

International transportation corridors leading to Burundi

- Northern corridor:
  a. Mombasa –Kampala- Bujumbura or Ngozi : Railway/Road
- Central corridor:
  a. Dar es Salaam-Dodoma- Isaka Ngozi : Railway/Road
  b. Dar es Salaam-Dodoma- Kigoma –Bujumbura : Railway/Lake
- Southern corridor:
  a. Maputo-Mpulungu-Bujumbura : Road/Lake

Kenya's railway infrastructure spans from the Port of Mombasa to the central highland regions, Lake Victoria, and neighboring countries. The railway is connected to Uganda Railways Corporation (URC) by wagon ferries across the Lake Victoria and via Malaba and to the Tanzania Railways Corporation (TRC) through a link from the Tanga line (Tanzania) to the rail network at Taveta (Kenya). The rail transport system offers both domestic services and international rail links with Uganda and Tanzania for import, export, and transit cargo to Great Lakes region. The railway is struggling to cope with increased competition from the private road transport sector. Coupled with budget constraints, this has resulted in the deterioration of its infrastructure, including locomotives, rolling stock, and equipment. Since the year 2000, the rail transport system has experienced consistent negative growth. Its current market share in the transportation of cargo through the port of Mombasa is reduced to about 20 percent of the port's throughput cargo.

Tanzania Railways Corporation (TRC) has 80 locomotives operating on the main lines of Dar es Salaam - Mwanza and Kigoma, used to transport both commercial and relief cargo. Almost 60 percent of these locomotives have reached their fully depreciated life (30 years) and need replacement or major repair. TRC currently has 650 covered wagons (boxcar), 260 high/large open wagons, and about 400 other wagons for containers, fuel tanks, livestock, and phosphate. About 200 of the covered wagons and 50 of the high/large open wagons need immediate repair.

Isaka Dry Port

In 1999 TRC established an inland container depot at Isaka (982 km from Dar es Salaam) which is now classified as a dry port. The facility is strategically located to serve the rich agricultural areas of Rwanda, Burundi, DRC, and North Western Tanzania. The dry port provides a holding point for containerized and general cargo thus eliminating the need to travel to Dar es Salaam. It is composed of a container stacking area with a capacity of 300 units, and storage warehouse of 3,000 MT.

II. iii. Port of Bujumbura

Bujumbura Port is situated on Lake Tanganyika on the northwest side of Bujumbura, approximately three km from the WFP Central Warehouse. The port handles a wide range of cargo, including bagged products (cement, sugar, fertilisers, etc), liquid bulks (oil products), break bulks (iron and steel), motor vehicles, machineries, and containerized cargoes. One mobile crane operates in combination with two labor teams on the ground, and can handle a maximum of 300 MT/day, or 250 MT of commodities and 20 containers per day.

The port operations management is a concession from the State of Burundi, and the port infrastructure belongs to the GOB. Rehabilitation works were completed in 1989 and a new contract was signed with the government in 1992 for a period of 10 years, which was renewed in 2002 for the same duration.

The Port of Bujumbura has four quays. The northern quay is equipped with a 50 MT fixed crane to handle containers, while the southern quay is equipped with five mobile cranes of five MT

each. The port has a mobile truck equipped with a 40 MT crane as well as forklifts and storage facilities. The draft limitations of the port are between seven and nine meters.

- Loading and off-loading of boats: US$ 2.00 per MT
- Loading and off-loading of trucks: US$ 1.40 per MT

Hydrocarbons

The tariff is US$0.12/liter.

Table 14. Handling Costs

Weight	Forklift (US$)	Elevator (US$)
Less than 5 tons	5.70	3.10
5 – 9.999 tons	19.00	9.50
10 – 14.999 tons	26.60	13.20
15 – 19.999 tons	34.20	17.10
20 tons and over	60.70	30.30

Source: WFP, Logistics Capacity Assessment, 2008

Table 15. Loading and Offloading Costs

IMPORT	Loading/Offloading (Boats US$/MT)	Loading/Offloading (Trucks US$/MT)
Products for the food industry	2.20	2.10
Products for the construction industry	2.40	2.00
Products for specific sectors	3.70	2.80
Merchandise in drums	2.90	2.40
Products destined to other sectors	4.50	3.40
Capital goods	5.70	4.40
Consumer durables	5.50	4.20
Food products	4.10	3.10
Consumable goods	4.10	3.10

Source: WFP, Logistics Capacity Assessment, 2008

II. iv. Road Network

Table 16. Classified Road Network under the Ministry of Public Work and Energy

Road Category	Length (km)	Unpaved (km)	Paved (km)
National	1,945	842	1,103
Provincial	2,522	2,500	21
Communal	282	282	0
Urban	462	0	462
Total network	5,200	3,625	1,586

Source: WFP- Burundi, Logistics Capacity Assessment, 2008

Burundi has over 11,000 km of roads divided in two categories:

1. Classified network: About 1,945 km of national or primary links, under the responsibility of the Ministry of Public Works and Equipment. The classified network includes 2,522 km of provincial roads linking provinces, and 282 km of communal roads.
2. "Unclassified" network: Over 6,000 km managed by local governments and councils, and distributed following geographical boundaries.

II. v. Transport Capacity

Burundi's transport market is gradually improving. Burundians have started investing in the private transport sector and have formed transport associations in order to profit from their combined efforts. The majority of transporters in the country are individuals with one or a few trucks which serve their private business but are also available for rent. Truck rental prices depend on capacity (tonnage), distance, road conditions, and fuel prices. Truck rental prices vary from US$0.25-0.45/MT per kilometer. Inland transport costs are outlined below.

Table 17. Inland Transport Costs (US$/MT)

Itinerary	Mode	Cost (bagged)	Cost(cartons)
Mombasa – Kampala	Rail	$ 85.10	$ 93.85
Mombasa-Kampala	Road	$ 123.00	$ 141.70
Kampala transshipment costs		$ 8.87	$ 8.87
Kampala – Bujumbura	Road	$ 90.00	$ 90,00
Border costs		$ 1.50	$ 1.50
Mombasa –Bujumbura	Road	$ 219.58	$ 237.29
Kampala – Bujumbura		$ 91.50	$ 91.50
Dar-Es-Salaam – Kigoma – Bujumbura	Road	$ 204,48	
Dar – Kigoma	Rail	$ 105.68	
Dar-Kigoma – Bujumbura		$ 125.44	

Source: WFP- Burundi, Logistics Capacity Assessment, 2008

Annex III. Historical Food Aid by Donor Program and Commodity

Table 18. Historical Food Aid Distribution USAID, USDA, WFP (MT)

Commodity	Program	2004	2005	2006	2007	2008
Corn & Corn Meal	USAID/WFP	28,000	21,600	15,800	5,700	3,900
	USAID Title II					200
	USDA/CCC		6,000	6,000		
	WFP	17,759	19,726	27,815	23,772	23,544
Total Corn & Corn Meal		45,759	47,326	49,615	29,472	27,644
CSB	USAID/WFP	1,500	2,600	2,500	910	
	USAID Title II					500
	USDA/CCC					
	WFP	5,589	3,436	1,833	1,688	2,630
Total CSB		7,089	6,036	4,333	2,598	3,130
Peas, Beans & Other Pulses	USAID/WFP	4,900	6,400	5,400	3,840	2,600
	USAID Title II					
	USDA/CCC		2,000	2,000		
	WFP	9,375	8,252	10,442	6,497	12,150
Total Peas, Beans & Other Pulses		14,275	16,652	17,842	10,337	14,750
Vegetable Oil	USAID/WFP	2,300	1,100	1,200	960	900
	USAID Title II					200
	USDA/CCC		1,000	1,000		
	WFP	1,607	1,274	1,631	2,073	3,008
Total Vegetable Oil		3,907	3,374	3,831	3,033	4,108
Total Food Aid		71,030	73,388	75,621	45,440	54,232

Sources: USDA and IGC

Table 19. Historical Food Aid Monetization USAID (MT)

Commodity	Program	2004	2005	2006	2007	2008
Wheat and Wheat Flour	USAID Title II	0	0	0	0	4,310
Total Monetization		0	0	0	0	4,310

Source: USDA

Annex IV. Wheat Statistics

Table 20. Detailed IPP Calculation for Wheat

Month	FOB - Argentina	Ocean Freight	Insurance	Est. IPP	IPP Mov. Avg (MA)	IPP MA + 10%	IPP MA - 10%	Sale Price	% of IPP MA[25]
1/1/2006	137.00	47.80	3.00	187.80	190.60	209.66	171.54		
2/1/2006	142.00	45.38	3.00	190.38	195.94	215.54	176.35		
3/1/2006	139.00	48.45	3.00	190.45	203.67	224.04	183.31		
4/1/2006	142.00	48.77	3.00	193.77	209.35	230.29	188.42		
5/1/2006	163.00	51.31	3.00	217.31	217.30	239.03	195.57		
6/1/2006	184.00	55.33	3.00	242.33	225.96	248.56	203.37		
7/1/2006	182.00	58.43	3.00	243.43	237.32	261.05	213.59		
8/1/2006	178.00	62.42	3.00	243.42	248.86	273.75	223.98		
9/1/2006	182.00	66.03	3.00	251.03	256.50	282.15	230.85		
10/1/2006	200.00	66.96	3.00	269.96	259.48	285.42	233.53		
11/1/2006	205.00	66.57	3.00	274.57	260.76	286.84	234.69		
12/1/2006	201.00	66.75	3.00	270.75	264.20	290.62	237.78		
1/1/2007	192.00	68.17	3.00	263.17	269.66	296.62	242.69		
2/1/2007	181.00	68.45	3.00	252.45	275.23	302.75	247.70		
3/1/2007	188.00	76.49	3.00	267.49	281.92	310.11	253.73		
4/1/2007	205.00	81.21	3.00	289.21	291.38	320.52	262.24		
5/1/2007	210.00	95.96	3.00	308.96	305.34	335.88	274.81		
6/1/2007	226.00	92.43	3.00	321.43	324.63	357.09	292.16		
7/1/2007	236.00	97.94	3.00	336.94	345.61	380.17	311.05		
8/1/2007	249.00	108.91	3.00	360.91	367.51	404.26	330.76		
9/1/2007	266.00	118.43	3.00	387.43	386.30	424.93	347.67		
10/1/2007	274.00	137.39	3.00	414.39	404.56	445.02	364.11		
11/1/2007	293.00	146.47	3.00	442.47	423.33	465.66	381.00		
12/1/2007	295.00	142.54	3.00	440.54	440.03	484.03	396.02		
1/1/2008	314.00	132.25	3.00	449.25	456.92	502.61	411.23		
2/1/2008	345.00	120.32	3.00	468.32	469.41	516.35	422.47		
3/1/2008	347.00	127.78	3.00	477.78	480.16	528.17	432.14		
4/1/2008	372.00	130.69	3.00	505.69	486.01	534.61	437.41		
5/1/2008	353.00	145.77	3.00	501.77	484.79	533.27	436.31		
6/1/2008	356.00	158.72	3.00	517.72	474.60	522.06	427.14		
7/1/2008	331.00	147.52	3.00	481.52	450.04	495.05	405.04		
8/1/2008	304.00	133.72	3.00	440.72	411.23	452.35	370.11		

[25] Sales price is compared to IPP Moving Average to allow for volatility during the period.

Month	FOB - Argentina	Ocean Freight	Insurance	Est. IPP	IPP Mov. Avg (MA)	IPP MA + 10%	IPP MA - 10%	Sale Price	% of IPP MA[25]
9/1/2008	282.00	112.00	3.00	397.00	369.53	406.48	332.58	425.00	115%
10/1/2008	233.00	69.86	3.00	305.86	330.66	363.72	297.59		
11/1/2008	188.00	43.00	3.00	234.00	299.22	329.14	269.30		
12/1/2008	173.50	33.38	3.00	209.88	273.79	301.17	246.41		
1/1/2009	211.00	31.61	3.00	245.61	253.76	279.14	228.39		
2/1/2009	218.50	39.94	3.00	261.44	245.08	269.59	220.57		
3/1/2009	215.67	44.07	3.00	262.74	247.29	272.02	222.56		
4/1/2009	211.50	42.29	3.00	256.79	256.65	282.31	230.98		

Annex V. Methodology to Determine the Potential Impact of a Food Aid Distribution Program

V. i. Introduction

The Bellmon Amendment requires assurance that a proposed food aid distribution program would not result in a substantial disincentive to or interference with domestic production or marketing. The extent to which distributed food aid has the potential to result in disincentive to local production and markets rests fundamentally on whether or not proposed food aid will represent "additional consumption" for beneficiary households, i.e., food consumption which would not have occurred in the absence of the food aid distribution program.

V. ii. Why Would Food Aid Introduce a Substantial Disincentive to Local Production and Markets?

Though food aid beneficiaries are expected to consume the food provided, households may respond to the receipt of food aid in a number of ways depending on prices, local diet preferences, perceived needs for non-food goods, and access to local markets. A beneficiary household may:

- Consume the food aid without reducing its regular market purchases or small-scale production to compensate for a food deficit in the normal diet caused by insufficient purchasing power, in which case the food aid represents additional consumption;
- Use a portion or all the food aid to displace market purchases that otherwise would have been made;
- Use a portion or all the food aid to substitute for the home consumption of own production and sell the released production in the market; or
- Consume some portion (or none of) the food aid and sell the other portion (or all) on the market, and use the income generated from that sale to consume other food and non-food goods.

Effective targeting of food-deficit households will avoid substantial disruption of local production and markets caused by providing food aid to households who would reduce market purchases and/or household production of staples after receiving food aid.

In the case of a distribution program such a PM2A, which has a very specific goal of preventing early childhood malnutrition, and therefore targets pregnant women, lactating mothers, and children under two years old (“effective targeting,” from a Bellmon perspective) would involve initial geographic targeting based on household food deficits, followed by targeting households

based on PM2A program eligibility (i.e., all children six to 23 months and all pregnant/lactating women).

V. iii. How Can We Determine Whether A Specific Proposed Food Aid Distribution Program Would Introduce a Substantial Disincentive?

The key to determining whether or not food aid would result in a substantial disincentive is to assess whether or not food aid would represent additional consumption. Ideally, one would conduct household surveys to determine whether or not a household would consume the food aid without changing their production and purchasing behavior, which would indicate whether or not food aid would represent additional consumption for the household. However, because household surveys are expensive and time-consuming, proxy indicators of additionality can be used to assess the potential for leakage. This is the approach taken in the present analysis.

Among the other possible proxy indicators of additionality are an estimated nutrition gap, food consumption score (or some other measure of actual consumption), sources and levels of income, malnutrition rates, and other food insecurity classifications (e.g., IPC), or some combination of these indicators.

V.iii.i Nutrition or Food Gap

A nutrition or food gap estimate provides a measure of the difference between available food (proxied by domestic food production) and the amount of food needed to support a specific per capita daily nutritional standard (generally 2,100 kcal per person per day). If estimated on a more localized level (i.e., at the level closer to the communities in which a Cooperating Sponsor would implement a distributed food aid program), a nutrition or food gap can provide a very useful measure of that volume of food which is not currently supplied by local production and/or markets, and which would represent an appropriate volume under a proposed Title II non-emergency food aid distribution program to assure minimal to no disincentive effect. In order to estimate a sub-national food or nutrition gap, it is necessary to collect data on population, production, and trade flows within relevant catchment areas. Collection of trade flow data at a sub-national level is an extremely time-consuming and expensive undertaking and outside the present BEST scope of work. For the purposes of the distribution analysis, one or more proxy indicators of additionality are used to characterize the relative food or nutrition gap at the sub-national level.

V.iii.ii Prevalence of Malnutrition in Children

While analysis of livelihood strategies may allow food insecurity to be assessed on the basis of the availability of and access to food, the analysis can ignore other effects including the degree to which food is effectively utilized. The relation between income and food security is context- and location-specific, with livelihood strategies as intervening variables. Factors such as disease, food hygiene, social customs, and food storage and preparation practices can all influence the extent to which available food is effectively utilized and will contribute to the ultimate level of nutrition. Where wealth and nutrition outcomes are strongly and positively

correlated, improving food access will help to improve nutritional outcomes. Conversely, where wealth status and nutritional status are only weakly correlated, increasing access alone will likely be an insufficient intervention to reversing malnutrition. Where intra-household resource allocation, poor feeding practices, or disease are significant underlying causes of malnutrition, distributed food aid will be more effectively used as an incentive to attend nutrition and health training.

The 2008 CFSVA did not find significant differences in the prevalence of stunting and wasting between wealth groups or between consumption groups. This strongly suggests that the observed levels of malnutrition within Burundi are not the result of food insecurity alone. Indeed, different factors often determine food security versus nutrition security.

The direct determinants of child malnutrition (breastfeeding, complementary food, disease incidence, and access and utilization of healthcare) may be more important factors in determining the prevalence of child malnutrition than household food security. Despite the weak relationship between malnutrition and food security, prevalence of stunting (low height-for-age) in children under five is reported here because it is interesting in its own right, as it is an important indicator of chronic under-nutrition. Notably, there is an extremely high prevalence of stunting throughout Burundi – only five out of 17 provinces have prevalence less than 50 percent. However, there is no clear difference in stunting rates across the three provinces under review.

V.iii.iii Integrated Phase Classification (IPC)

The Integrated Phase Classification scheme represents a collaborative effort of Care, JRC, FAO, FEWS NET, Oxfam, Save the Children UK, Save the Children US, and WFP to create a common classification system to represent food insecurity. The IPC scale classifies areas as moderately/borderline food insecure based on key reference outcomes including indicators of food access and availability, crude mortality rate, acute and chronic malnutrition, water access and availability, dietary diversity, hazards, coping strategies, livelihood assets, and structural hindrances to food security.

V. iv. How Can We Assess Additionality In Burundi?

This report relies on Food Consumption Scores (defined below) as the proxy indicator of additionality because they are the best available indicators of the relative absorptive capacity of food aid on a sub-national basis. A Food Consumption Score (FCS) is a proxy indicator of the availability and access dimensions of food security and, to a lesser extent, the utilization dimension. It reflects relative food insecurity and, therefore, relative level of additionality food aid would likely represent. Though it does not provide a quantitative measure of any nutrition gap, which could then be compared with the ration under the proposed food aid program to assess by how much the 'nutrition gap' might be filled with the ration, it does provide a snapshot of both the frequency and diversity of household staple consumption.

V. v. Assessment of Local Impact

Because of the localized nature of the impact of distributed food aid and the vulnerability of small markets to disruptions and small farmers to production disincentives, even quantities which may appear insignificant when compared to a county's total food staple consumption can

have a major impact at the local level. This sub-national distribution analysis has been developed at a provincial level, which reflects the availability of the highest-quality data to assess sub-national variation in additionality.

Annex VI. Livelihood Zones & Livelihood Strategies Within Five Select Provinces

VI. i. Livelihood Zones & Current IPC Assessments

The five provinces of Cibitoke, Kirundo, Ruyigi, Muyinga, and Cankuzo span seven different livelihood zones. Cibitoke, in the northwest, spans three major livelihood zones: Plaine Imbo (Imbo Plain), Crête Congo-Nil (Congo-Nile Crest), and Haute Altitude (Highlands). Kirundo, in the northeast, also spans three major livelihood zones: Dépression du Nord (Northern Lowlands), smaller portions of Plateaux Secs de L'Est (Dry Eastern Plateau), and Plateaux Humides (Humid Plateau) in the south and southwest of the province, respectively. Ruyigi, in the east, spans two livelihood zones: Plateaux Secs de L'Est and Dépression de l'Est (Eastern Lowlands). Muyinga, in the northeast, spans Plateaux Secs de L'Est. In the central east, Cankuzo spans the two zones of Plateaux Secs de L'Est and Dépression de l'Est.[26] See Annex III for a map of Burundi's livelihood zones.

According to the most recent Integrated Food Security Phase Classification report (IPC 2009), the majority of Burundi is classified as Phase 2 - Moderately/Borderline Food Insecure, with key exceptions primarily along the eastern border. See Annex IX for most recent IPC map.[27]

The livelihood zones spanning Cibitoke have been classified as Phase 2 - Moderately/Borderline Food Insecure. The exception is Buganda commune in the southeast of Cibitoke, which has been classified as Phase 3 - Acute Food and Livelihoods Crisis.

The majority of communes within Kirundo province, most of which lie within Dépression Nord, have been classified as either Phase 3 - Acute Food and Livelihoods Crisis (Ntega, Gitobe, Kirundo communes) or Phase 3 - Acute Food and Livelihoods Crisis. There is a high risk of deteriorating food security conditions within the communes of Bugabira and Busoni due to drought, market disturbances, and influx of returnees and refugees.

While Plateaux Secs de L'Est in the west of Ruyigi is classified as Phase 2 - Moderately/Borderline Food Insecure, Dépression de l'Est in the east of Ruyigi, which generally spans the communes of Gisuru, Kinyinya, and Nyabitsinda, has been classified as Phase 3 - Acute Food and Livelihoods Crisis. Gisuru faces a high risk of deteriorating food security conditions due to drought, civil insecurity, market disturbances, disease outbreaks, and influx of refugees and returnees.

[26] Republic of Burundi Ministry of Agriculture and Husbandry, "Cadre Intégré de Classification de la Sécurité Alimentaire Juillet 2008 à Janvier 2009," released April 2009.
[27] The Integrated Phase Classification (IPC) is a standardized scale that integrates food security, nutrition and livelihood information into a clear statement about the nature and severity of a crisis and implications for strategic response.

The commune of Giteranyi in Muyinga faces a risk of deteriorating conditions due to drought, market disturbances, and influx of returnees and refugees.

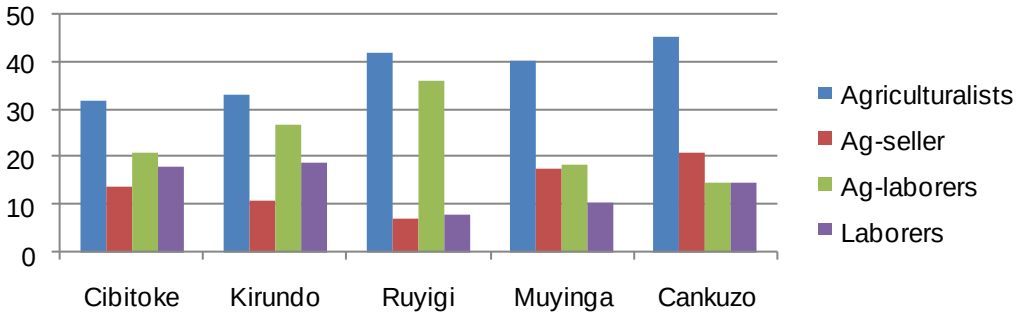
Likewise, Mshiha commune in Cankuzo faces a risk of deteriorating conditions due to drought, civil insecurity, market disturbances, disease epidemics, and influx of returnees and refugees.

VI. ii. Livelihood Strategies

VI.ii.i Dominant Livelihood Strategies

Within the rural areas of Burundi, there are four dominant livelihood strategies which account for 87 percent of the population – agriculturalists, agro-sellers, agro-laborers, and laborers. The figure below provides a breakdown of these livelihood types by study area.

Figure 4. Defining Livelihood Characteristic



A given livelihood strategy may include more than one activity undertaken to obtain food or cash.[28] Laborers and agriculturalists depend mainly on just one activity to sustain their livelihoods, which increases their vulnerability because their ability to switch between strategies to secure their livelihoods is relatively limited. Laborers cannot draw on their own production to sustain their livelihood, however. Agriculturalists are primarily dependent upon their own production, deriving additional cash from the sale of their surplus (mainly staple) crops. Agro-laborers depend on two activities (both labor and own production), while agro-sellers obtain income from the sale of cash crops in addition to the direct consumption of their own staple production. Marginalists constitute a relatively small group (1.2 percent of all livelihoods); however, they are among the most food insecure, as they depend primarily on pensions and transfers.

The table below provides an overview of key characteristics of each strategy that are most relevant to food security.

[28] A simplified use of the term "livelihood strategy" is employed here to describe households who share a similar set of productive activities to sustain their livelihood.

Table 21. Key Characteristics of Livelihood Strategies[29]

Livelihood Strategy	Agriculturalists	Agro-sellers	Agro-laborers	Laborers	Marginalists
% HHs with Given Livelihood Strategy within Province	Cibitoke: 32 Kirundo: 33 Ruyigi: 42 Muyinga: 40 Cankuzo: 45	Cibitoke: 14 Kirundo: 11 Ruyigi: 7 Muyinga: 18 Cankuzo: 21	Cibitoke: 21 Kirundo: 27 Ruyigi: 36 Muyinga: 18 Cankuzo: 15	Cibitoke: 18 Kirundo: 19 Ruyigi: 8 Muyinga: 11 Cankuzo: 15	Provincial distribution not available
% Dependent upon Agriculture	90	62	62	21	12
% Dependent upon Labor	_	_	34	74	
% Dependent upon Pensions /Transfers	negligible	negligible	negligible	negligible	5/79
% Population with Poor Food Consumption Score (FCS), Proxy Indicator of Food Insecurity[30]	5	3	3	10	10
Prevalence of Stunting in Children <5 yrs	54%	49%	55%	53%	Not available
Average Annual Income (BIF)	195,000	380,000	240,000	250,000	90,000
% Classified as Asset Poor	24	15	30	48	76
% Within Lowest Wealth Quintile	16	10	24	40	40
% Monthly Expenditure on Food	67	63	70	76	76
% with Access to 0.25 ha or Less	20	14	18	41	64
% with 0 Livestock Holdings (LTU)	34	27	44	61	83
Main Coping Strategies	Early harvesting of green crops, eating grain stored for seed.	Not available	Not available	Reduction of Food Intake, skipping meals, working for food only, depending on food aid, aid from friends and family, begging and borrowing	Not available
Key Vulnerabilities	Poor weather, Pests	Poor weather, Poor markets	Poor Weather, Reduced employment opportunities, high food prices	Poor weather, Reduced employment opportunities, high food prices	Poor Weather, high food prices, illness
% Female-Headed Households (Compared to 18% Nationally)	20	15	18	19	55

VI. iii. Seasonality

All four livelihood groups are heavily reliant on weather and cycles associated with the agricultural calendar. There are two harvest seasons, December-February (A) and May-July (B), and two planting seasons, February-May (A) and September-October (B). See Annex IX for an overview of Burundi's seasonal calendar. According to CFSVA 2008, most households store about five weeks' worth of food on average, but most households (1) lack adequate storage capacity to hold food crops for sale during the lean season when prices are higher; and (2) lack sufficient assets and/or cash to pay debts accumulated during the previous lean season

[29] Source for all indicators CFSVA 2008.

[30] The CFSVA uses a food consumption score (FCS) as a proxy indicator of the access dimension of food security and nutrition intake. Through sample surveys of households throughout Burundi's 17 provinces, 7-day recalls of food consumption provided a snapshot of food consumption during the 2008 harvest season B, the time of survey implementation. The weighted score reflects both dietary diversity and frequency of consumption of food items. See Section 5.3 herein, and.CFSVA 2008, pp51-54, for further details of how the FCS is calculated.

and so are forced to sell excess crops during harvest period when prices are lowest. During lean seasons, all groups must purchase food on the market when prices are highest and food most scarce (with peaks in October and February, corresponding to the beginning of planting seasons A and B, respectively).

VI. iv. Local Diets

With some regional variation, tubers (sweet potato and cassava) are the base of the local diet, supplemented with some vegetables, cereals (mainly corn and sorghum), and vegetable oil. The table below reports the percent of households cultivating select crops within the five provinces under review.

Table 22. Percent of Households Cultivating Select Crops within Study Areas

Crop	Cibitoke	Kirundo	Ruyigi	Muyinga	Cankuzo	National Average
Cereals:[31]						
Corn	78.9	40.8	74.8	46.6	77.8	68.5
Wheat	0.3	0.4	6.5	3.0	11.0	5.5
Rice	17.7	29.8	19.9	17.5	5.4	15.9
Sorghum	1.3	40.4	65.8	44.1	71.7	20.5
No cereals	19.2	17.9	4.6	21.6	4.1	17.4
Pulses:						
Ground-nuts	25.8	4.3	42.1	15.2	49.9	18.2
Beans	85.7	96.1	90.3	90.5	84.5	89.3
Peas	2.2	2.1	7.7	4.2	0.2	10.0
Niebe	0.8	0.0	4.1	0.0	3.8	3.3
No pulses	8.0	1.1	0.8	1.1	4.8	3.5
Tubers:						
Cassava	93.4	80.7	78.0	78.7	82.1	72.7
Sweet potato	74.1	93.6	86.4	94.8	84.3	88.2
Irish Potato	1.5	2.2	1.9	3.2	1.4	7.8
No tuber	1.9	3.6	3.1	1.9	3.6	3.6

VI. v. External Shocks

The most common shocks experienced by households in Burundi are:

- Extremes of weather (drought and floods)
- Pests and diseases
- Unexpectedly high prices (caused by rapid general inflation or by shortages of specific commodities)

In addition, households may experience:

[31] Per CFSVA, the percentage of households cultivating each crop during season 2008A. Note staple production figures represent the percentage of household who cultivate each crop by province; these figures do not indicate *how much* of any given crop is cultivated, just whether or not *any* of a given crop is cultivated.

- Loss of employment opportunities (often due to a fall in commodity prices)
- Conflict (with impacts ranging from loss of all assets to diminution of markets)

The correlation between livelihood strategies and shocks in Burundi appears much weaker than the correlation between geography and shocks. That is, people in Burundi may have differing livelihood strategies to similar shocks, according to the area they live in. Overall, drought was most frequently reported in the east and south provinces, including Ruyigi and Cankuzo. High prices were most frequently reported in the west, while hail was most frequent in the north.

Across livelihood groups, drought affected those with a strategy most dependent on agricultural production, such as the agriculturalists. However, agro-laborers and agro-traders also frequently reported drought as a shock. For more than 99 percent of households, the shock resulted in a loss of wealth (goods or income) and a loss in the capacity of the household to produce or purchase food.

High prices were reported as a shock by one third of the households in 2008. Seasonal cycles reflect the supply/demand market response to food availability and food production cycles. At the same time, rapid inflation has reportedly affected many households. Ability to smooth consumption is partially affected by access to credit. Nearly 75 percent of households report some access to credit, but the source is generally family and friends, particularly in Ruyigi. Only 47 percent of households report any access to local commercial lenders. Cooperatives are rare.

Plant pests and diseases were reported throughout Burundi, most frequently in Cankuzo and Cibitoke, followed by the south. This may be due to the concentration of agro-sellers and, to a lesser extent, agriculturalists in the region. The increased pressure from cassava mosaic disease may have affected agricultural production in those provinces.

VI. vi. Proxy Indicator of Additionality: Food Consumption Score

See Section V.iii for a general description of Food Consumption Scores (FCSs).

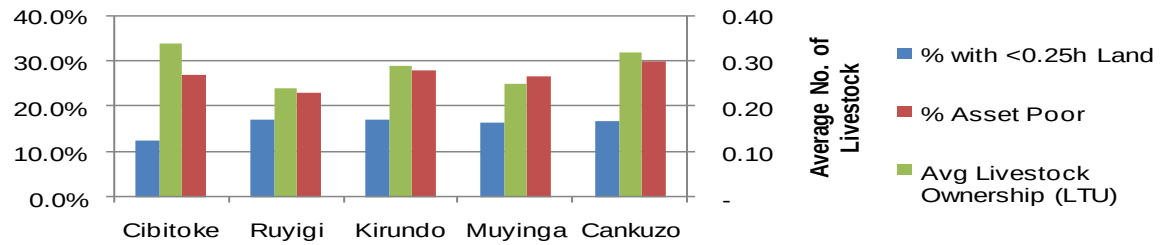
Among livelihood groups, laborers and marginal households constitute the greatest proportion of the most food insecure (proxied by Poor FCS). Food insecure households are more frequently among the lowest wealth quintile and asset-poor households, who are primarily engaged in labor-only activities to sustain their livelihood or who live on transfers and gifts. On average, they have access to less land and more frequently do not own the plots they cultivate. Compared to relatively more food secure households, most food insecure households are more frequently female-headed households, more frequently single-heads (i.e., widow(-er), divorced, single never married), more likely to be headed by less-educated individuals, with lower average household size (4.4 members for Poor FCS vs. 5.5 members for Acceptable FCS), and higher dependency ratio indicating fewer active adults relative to dependents.

There is a higher percentage of households with Poor FCS in Cankuzo (8.7 percent), Muyinga (8.6 percent), and Cibitoke (7.7 percent), as compared to Ruyigi (4.4 percent) and Kirundo (2.2 percent). The percentage of households with Borderline FCS follows a similar pattern –

Cankuzo, Muyinga, and Cibitoke still have the highest percentages at 25.4 percent, 22.6 percent, and 28.6 percent, respectively. Kirundo is slightly higher (22.8 percent) than Ruyigi (20.8 percent).

From the perspective of livelihood assets, as shown in the figure below, there are a larger proportion of asset-poor households in Cibitoke than in the other provinces. Livestock ownership is generally low across all five provinces relative to the center and south of the country, though slightly higher in Cankuzo relative to the other four provinces. The percentage of households with less than 0.25 ha of land is lowest in Cibitoke (12.5 percent), relative to Ruyigi (17.2 percent), Kirundo (17.2 percent), Cankuzo (16.9 percent), and Muyinga (16.5 percent).

Figure 5. Livelihood Assets



VI. vii. Vulnerable Populations: Returnees

Assessments of food insecurity based upon livelihood strategies ignore those who have yet to fully adopt a livelihood strategy because they have only recently arrived within a given area. Many households displaced during the protracted war are returning to their former home areas. These households can be considered food insecure for at least three months upon return, and potentially until they have either harvested their first crops successfully or obtained employment. The number of returnees within a given province is therefore a major factor affecting the level of food insecurity.

Returnees may constitute a short-term need that can be considered as met once the returnees have been integrated into the local community. However, if integration is not possible, or coincides with other shocks to the community, the need may become more chronic and will require reassessment.

Despite acceptable average FCS among returnees, returnees remain vulnerable to food insecurity and warrant special attention because they tend to engage as laborers, have a relatively vulnerable livelihood strategy, and because their asset wealth is below average.

WFP reports there were nearly 60,000 returnees between January and July 2008, with an additional 118,000 expected to return before the end of 2008. According to the most recent IPC report for Burundi, there is a particularly high probability of a large influx of returnees to the communes of Busoni and Bwambarangwe in the west of Kirundo. This influx implies a risk of deteriorating food security conditions within the communes. As noted above, the Dépression de

l'Est livelihood zone, which spans almost half of Ruyigi province, is currently classified as Phase 3 - Acute Food and Livelihoods Crisis. Within this zone, the commune of Gisuru is at risk of developing into a Phase 4 - Humanitarian Emergency. This risk is due to a massive influx of returnees, low yields due to poor rains during the 2008 season B, and presence of cassava mosaic. Three of five communes in Cankuzo are Phase 3, and have sizeable returnee/refugee populations.

VI. viii. Market Integration

This analysis is based on the idea that a well-designed and executed food aid program, whose transfers correspond to the needs of the household, will have minimal to no impact on the market or local production incentives. However, the BEST team acknowledges that perfect targeting and program implementation is nearly impossible, and that there are likely to be some leakages no matter how well a program is designed. Whether or not any impact is substantial depends in part on the level of market integration. The greater the level of integration of the local market to larger markets, the lower the likelihood and severity of impact of any such leakage on markets and production incentives since any change in supply associated with the introduction of food aid will represent a smaller portion of the overall market.

Poor market access is commonly noted throughout Burundi's rural areas. Poor transportation and lack of established wider markets limit opportunities for purchases or sales of commodities to small local markets, where prices tightly align with the agricultural calendar. Nevertheless, trade figures suggest some inter-provincial and/or international trade with neighboring countries within each of the five provinces under review. An assessment of trade flow volumes would provide a more accurate picture.

Any negative impact on markets and production resulting from limited market integration will be mitigated, however, by two factors. First, local prices may only partially reflect overall food supply or availability precisely because of transport constraints or lack of information of external markets. Second, and perhaps more important in the case of a subsistence economy, whether people alter their own production in response to market prices will depend upon the amount of production they reserve for own consumption versus sale on the market. While provincial figures are unavailable, national estimates of the proportion of production of 11 crops reserved for self-consumption reveal that for all the crops, more than 50 percent of own production is kept for consumption. For five crops (corn, cassava, sweet potato, Irish potato, and beans/pulses), over 80 percent of the production is reserved for consumption. If people do not alter own production in response to prevailing market prices, market-generated disincentive effects on subsistence production would be minimal. Conversely, where a greater proportion of a provincial population is engaged as agro-sellers, one might expect that a decrease in price associated with the influx of food aid would have a relatively larger disincentive effect on production and markets.

While there is extremely limited data available on the relative integration of markets within the five provinces under review, evidence on prevalence of livelihood strategies suggests differing

degrees of reliance on markets. Where the proportion of agro-sellers is high, such as in Cankuzo and Muyinga, sensitivity to market prices will be relatively greater than in Ruyigi.

VI. ix. Remittances

Migration for work is common in Burundi. Over one-third of households have at least one member who works outside the colline. Among these households, remittances are likely to be an important source of income. At the provincial level, migration is most common in Ruyigi and Kirundo, with international emigration most common in border provinces like Cankuzo and Kirundo.

The CFSVA found that for more than 80 percent of households, migrants brought back or sent money; nearly 45 percent brought back or sent food items. Transfers are reportedly fairly constant throughout the year, though migration patterns tend to follow the agricultural calendar. Most households reporting migration did so in February (planting for season B) and in September-October (planting for season A). There is no current available data on either the size of remittances or relative importance as a source of income within specific provinces.

Annex VII. Provincial Analyses for Five Select Provinces

VII. i. Cibitoke

Cibitoke is a land-locked province located in the north western part of the country. It shares borders with Rwanda in the north, DRC in the west, and Bubanza and Kayanza provinces in the south. The territory spans three major livelihood zones: Plaine Imbo (Imbo Plain) (Phase 2 - Moderate Food Insecurity with exception of Buganda commune, which is classified as Phase 3 - Acute Food and Livelihoods Crisis), Crête Congo-Nil (Congo-Nile Crest) (Phase 2 - Moderate Food Insecurity), and Haute Altitude (Highlands) (Phase 2 - Moderate Food Insecurity, with the exception of Kabarore commune which is classified as Phase 3 - Acute Food and Livelihoods Crisis).[32]

The most recent census estimates the population is 460,626, most of whom are smallholder farmers. The main local staples are beans, sweet potato, and cassava. Food supply is largely sourced locally. The other principal sources of supply for staple commodities are imports from Bubanza and Kayanza provinces, which each supply less than 25 percent of consumption. Cash crops include cotton, rice, palm oil, tea, coffee, and quinquinna.

Cibitoke has a low percentage of land ownership (50.8 percent), but a high level of engagement in off-farm employment or trade. Cibitoke also has a moderate percentage of agro-sellers among the five provinces, suggesting a fairly sophisticated and integrated market. While this may imply greater opportunities for securing livelihoods, perhaps reflected in the IPC classification as only moderately food insecure, Cibitoke also has one of the highest percentages of poor FCS households across all provinces, as well as among the five provinces reviewed here. The table below outlines key characteristics related to food insecurity within Cibitoke, followed by a table which outlines the main sources of food and income of the poor and extremely poor in Cibitoke.

Table 23. Key Characteristics Related to Food Insecurity within Cibitoke

Characteristic	Cibitoke	National Average
% Agriculturalists	32	34
% Agro-sellers	14	18
% Agro-laborers	21	21
% Laborers	18	15
% Population with Poor Food Consumption Score (FCS), Proxy Indicator of Food Insecurity[33]	7.7	4.8

[32] Republic of Burundi Ministry of Agriculture and Husbandry, "Cadre Intégré de Classification de la Sécurité Alimentaire," released April 2009.

[33] The CFSVA uses a food consumption score (FCS) as a proxy indicator of the access dimension of food security and nutrition intake. Through sample surveys of households throughout Burundi's 16 provinces, 7-day recalls of food consumption provided a snapshot of food consumption during the 2008 harvest season B, the time of survey implementation. The weighted score reflects both dietary diversity and frequency of consumption of food items. See CFSVA 2008, pp51-54, for further details of how the FCS is calculated.

Characteristic	Cibitoke	National Average
% Population with Borderline Food Consumption Score (FCS), Proxy Indicator of Food Insecurity	28.6	22.9
Prevalence of Stunting (low height-for-age) in Children <5 yrs[34]	58.1	52.7
% HH with < 0.25 ha land	12.5	not available
% asset poor	33.4	26.9
average livestock ownership (LTU)	0.26	0.30
% HH lack access to safe water	26.8	23.6

Table 24. Main Sources of Food and Income among the Poor and Very Poor for Cibitoke

Group	Main sources of food	Main sources of income
Poor	Own production of agriculture	Skilled labor
	Purchases	Formal commerce between Cibitoke, DRC, and Rwanda (many opportunities)
		Unskilled Labor
Very Poor	Own Production	Sale of production
	Local Markets	Petty Trade

Due to a combination of its geography and the livelihood strategies of its population, Cibitoke, and especially its unemployed population, is vulnerable to shocks due to: poor rainfall, high food prices, the effects of cassava mosaic, and high insecurity from Bubanza province and Bujumbura rural.

VII.i.i Ongoing Development Programs

WFP has been operating a Protracted Relief and Recovery Operation (PRRO) in Burundi since January 2009. The program is expected to run through December 2010. Current activities in Cibitoke include therapeutic feeding, HIV/AIDS, and MCH nutrition programs. Other planned activities include institutional feeding, FFA, and FFT, but these have not yet been implemented. The table below outlines the WFP programs in Cibitoke including rations, timing, and planned and actual numbers of beneficiaries.[35]

[34] Despite the weak relationship between malnutrition and food security, prevalence of stunting (low height-for-age) in children under 5 is reported here because they are interesting in their own right since because they are an important indicator of chronic undernutrition. Notably, there is an extremely high prevalence of stunting throughout Burundi – only five out of 16 provinces have prevalence less than 50%. However, there is no clear difference in stunting rates across the three provinces under review.

[35] WFP Resourcing Update, dated 19 Jan 2009, accessed via http://www.wfp.org/sites/default/files/PRROs%20as%20of%2019%20January%202009.pdf . The report indicates an operating budget of $140 million for PRRO (only 18% funded as of 30 Apr 09, personal communication with WFP Burundi programme officer), but does not provide a breakdown by province.

Table 25. Ongoing Food Aid and Cash Transfer Programs in Cibitoke

Coverage	Timing	Ration (kcals)	program duration	*Planned* Total Number of Beneficiaries *Per Year*[36]	*Actual* Number of Beneficiaries *To Date*[37]
WFP Therapeutic Feeding/ infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	500 total for infants and caregivers in Cibitoke (3,000 total)	72
WFP Therapeutic Feeding/ caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	500 total for infants and caregivers in Cibitoke (3,000 total)	72
WFP FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	1,200 in Cibitoke (6,000 total)	0
WFP FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	12,500 in Cibitoke (244,000 total)	0
WFP MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Cibitoke (70,000 total)	641
WFP MCH/mother	270 days	cereals 100g, pulses 50g, oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Cibitoke (70,000 total)	468
WFP HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	1,000 in Cibitoke (6,000 total)	69

At this stage, no direct information on effectiveness of targeting is available within individual provinces or under specific programs, including the WFP PRRO. However, a household survey conducted in mid-2008 as part of the CFSVA provides some indirect evidence that, at least based on the study's proxy indicator of food insecurity (Poor FCS), only a small portion of food insecure households received any food aid, and past inclusion error was very high.

Of the estimated 75,170 food insecure households (Poor FCS) in Burundi, only 11,125 households received food aid, while an estimated 130,208 of the 1,132,245 food secure (Acceptable FCS) households received food aid. This suggests an inclusion error of some 94 percent which indicates extremely poor targeting in the past. If we also consider households with Borderline FCS as food insecure (43,035 of the 358,623 households with Borderline FCS received food aid), the inclusion error is still 61 percent. Even if all Poor FCS households had in

[36] WFP is implementing a 24-month PRRO in Burundi with a geographic focus primarily on 6 provinces (Kirundo, Ngozi, Kayanza, Karuzi, Muyinga and Ruyigi). However, certain programs may extend beyond these provinces, for example, to disaster-prone areas (for GFD) or areas with low school enrollment (for school feeding programs). No breakdown of planned beneficiary numbers by province is available. For the purposes of estimating program coverage within individual provinces, total *planned* beneficiary caseloads are divided by 6 to derive individual province planned caseloads. Actual program implementation may differ depending on province-specific needs so these estimates should be viewed with some caution.

[37] "Actual number of beneficiaries to date" reflects the number of beneficiaries served within the province during the first quarter of 2009.

fact received food aid, there were still more than 100,000 households who received food aid which were not food insecure, according to this indicator.

This may in part reflect findings from previous evaluations[38] which have found targeting especially problematic in Burundi due to insecurity (e.g., restrictions on CS travel and delivery of food aid) and inappropriateness or inability to use participatory targeting (e.g., when participatory groups selected to identify most vulnerable populations are composed of representatives from the army, are all male, or from a particular ethnic group).

Poor targeting should be expected to translate into relatively larger disincentive effects where the provincial livelihoods are more sensitive to market prices. Because there is a high proportion of agro-sellers in Cibitoke, sensitivity to market prices will be relatively greater than in either Kirundo or Ruyigi, which both have a relatively greater proportion of agriculturalists living off their own production.

VII.i.ii Beneficiary Coverage Under A Proposed PM2A Program

Using Poor FCS as a proxy indicator of food insecurity, there are an estimated 1,058 food insecure households potentially eligible for a PM2A program in Cibitoke. Using Unacceptable FCS, there are 13,377 potentially eligible households. To assess potential absorptive capacity, the table below provides a comparison of available rations under the three proposed funding levels (US$10 million, US$9 million, and US$7.5 million spent directly on food rations) and four possible concentration levels (100 percent, 50 percent, 33 percent, and 25 percent concentration within a given province), with the estimated number of food insecure households with eligible beneficiaries.

"Coverage" is defined here as the number of household rations divided by the number of PM2A-eligible food insecure households (expressed as a percentage), with food insecurity defined alternately as either Poor FCS or Unacceptable FCS. Any coverage over 100 percent would be indicative of poor targeting from a Bellmon perspective, meaning that households which might be eligible based on demographic characteristics but which would *not* be considered food insecure on the basis of a proxy indicator (as defined within this report) would likely receive PM2A rations, if the PM2A program is restricted geographically to the five provinces considered for this particular analysis.

Table 26. Available Number of Rations Relative to the Number of Food Insecure Households with PM2A Eligible Beneficiaries within Cibitoke Province

PM2A Funding for Food Aid	% food aid concentrated within Cibitoke	coverage (*poor* FCS)	coverage (*unacceptable* FCS)
$10 million	100%	881%	187%
$10 million	50%	440%	93%
$10 million	33%	291%	62%

[38] PRRO Regional Evaluation 2002

PM2A Funding for Food Aid	% food aid concentrated within Cibitoke	coverage (*poor* FCS)	coverage (*unacceptable* FCS)
$10 million	25%	220%	47%
$9 million	100%	793%	168%
$9 million	50%	396%	84%
$9 million	33%	262%	55%
$9 million	25%	198%	42%
$7.5 million	100%	661%	140%
$7.5 million	50%	330%	70%
$7.5 million	33%	218%	46%
$7.5 million	25%	165%	35%

VII. ii. Kirundo

Kirundo is a land-locked province in the northeast. It shares borders with Rwanda in the north, Ngozi province in the west, and Muyinga province in the east. The territory spans two major livelihood zones: Dépression Nord (Northern Lowlands) (Phase 3 - Acute Food and Livelihoods Crisis), and Plateaux Secs de L'Est (Dry Eastern Plateau) (Phase 2 - Moderate Food Insecurity). There is also a small section of southwest Kirundo (the southwest of Vumbi commune) which falls within the Plateaux Humides livelihood zone and is currently classified as Phase 2.

According to the most recent IPC report for Burundi, there is a particularly high probability of a massive influx of returnees to the communes of Busoni and Bwambarangwe in the west of Kirundo. This influx suggests a high risk of deteriorating food security conditions within the communes, deteriorating to a Phase 3 - Acute Food and Livelihoods Crisis, and a moderate risk of deterioration to a Phase 3 - Acute Food and Livelihoods Crisis within the Dépression Nord livelihood zone (which covers most of Kirundo province).

The majority of Kirundu's population of 636,298 are smallholder farmers (average landholding is 0.94 ha), who produce cereals (30 percent), legumes (20 percent to 30 percent), roots and tubers (less than 10 percent), and bananas (between 15 and 20 percent). Coffee and rice are grown as cash crops. The main local staples are beans, sweet potato, and cassava. Food supply is largely sourced locally. Other principal sources of supply for staple commodities are imports from Muyinga and Ngozi provinces, which each supply approximately 10 percent of the commodities consumed in Kirundo.

In Kirundo, as in Ruyigi, agriculture is the main source of income and employment. However, compared with Ruyigi, Kirundo offers more off-farm employment, so that reliance upon agriculture is marginally reduced. The table below outlines key characteristics related to food insecurity within Kirundo, and is followed by a table which indicates the main sources of food and income of the poor and extremely poor.

Table 27. Distribution of Livelihood Strategies and Production of Staples in Kirundo

Characteristic	Kirundo	National Average
% Agriculturalists	33	34
% Agro-sellers	11	18
% Agro-laborers	27	21
% Laborers	19	15
% Population with Poor Food Consumption Score (FCS), Proxy Indicator of Food Insecurity[39]	2.2	4.8
% Population with Borderline Food Consumption Score (FCS), Proxy Indicator of Food Insecurity	22.8	22.9
Prevalence of Stunting (low height-for-age) in Children <5 yrs	51.9	52.7
% HH with < 0.25 ha land	17.2	not available
% asset poor	23.9	26.9
average livestock ownership (LTU)	0.23	0.30
% HH lack access to safe water	23.9	23.6

Table 28. Main Sources of Food and Income among the Poor and Very Poor in Kirundo Province

Group	Main sources of food	Main sources of income
Poor	Own production Local Markets Donations Fishing	Skilled labor Formal commerce between Rwanda and Kirundo Province Unskilled Labor
Very Poor	Own Production Local Markets	Sale of own production Petty Trade

Due to a combination of its geography and the livelihood strategies of its population, Kirundo is vulnerable to the following shocks:

- Poor rainfall
- High prices for seeds
- Sporadic reduction in opportunities for income generating activities
- High prevalence of malaria in the region
- High incidence of cassava mosaic virus
- Deforestation
- High population pressure

[39] See section 5.3 for an overview of how the FCS is calculated.

VII.ii.iii Ongoing Development Programs

CRS, WFP, and IMC are currently operating programs in Kirundo. WFP has been operating a Protracted Relief and Recovery Operation (PRRO) in Burundi since January 2009. The program is expected to run through December 2010. Current activities include therapeutic feeding, HIV/AIDS, and MCH nutrition programs. Other planned activities include institutional feeding, FFA, and FFT but these have not yet been implemented. The table below outlines the programs operating in Kirundo, including rations, timing, and planned and actual numbers of beneficiaries.[40]

Table 29. Ongoing Food Aid and Cash Transfer Programs in Kirundo

CS	Coverage	Timing	Ration (kcals)	program duration	*Planned* Total Number of Beneficiaries *Per Year*[41]	*Actual* Number of Beneficiaries *To Date*[42]
CRS	Supplementary Feeding		CSB 240g, oil 30g per day	Aug 2008 - July 2011		2700
CRS	Outpatient therapeutic Feeding		bulgur 330g, lentils 330g, CSB 50g, oil 25g	Aug 2008 - July 2011		
CRS	CTC – stabilization center		bulgur 330g, lentils 330g, CSB 50g, oil 25g, salt 5g	Aug 2008 - July 2011		
CRS	PLHIV	360 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, sugar 22g per person per day (dry/monthly)	Aug 2008 - July 2011		700 – 800
CRS	FFA		CMSF 1.5kg, lentils 0.5 kg per person per day	Aug 2008 - July 2011	1800 in Kirundo (est.) (5400 Total)	1800
IMC	Therapeutic feeding/ infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)		500 total for infants and caregivers in Kirundo (15,000 children planned)	
IMC	Therapeutic Feeding / caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)		500 total for infants and caregivers in Kirundo (15,000 children planned)	
WFP	General food distribution	75 days/yr in Apr/May and Nov/Jan	cereals 450g, pulses 50g, 25g oil, 5g salt (2000 kcal)	Jan 2009 - Dec 2010	91,667 # in Kirundo (550,000 total)	82,010
WFP	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010	35,000 total planned (# in Kirundo actual?)	0
WFP	Institutional Feeding	360 days	cereals 360g, pulses (beans) 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	667 in Kirundo (4,000 total)	340
WFP	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	40,667 in Kirundo (244,000 total)	5,200
WFP	FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	500 in Kirundo (6,000 total)	0

[40] WFP Resourcing Update, dated 19 Jan 2009, accessed via http://www.wfp.org/sites/default/files/PRROs%20as%20of%2019%20January%202009.pdf . The report indicates an operating budget of $140 million for PRRO (only 18% funded as of 30 Apr 09, personal communication with WFP Burundi programme officer), but does not provide a breakdown by province.

[41] WFP is implementing a 24-month PRRO in Burundi with a geographic focus primarily on 6 provinces (Kirundo, Ngozi, Kayanza, Karuzi, Muyinga and Ruyigi). However, certain programs may extend beyond these provinces, for example, to disaster-prone areas (for GFD) or areas with low school enrollment (for school feeding programs). No breakdown of planned beneficiary numbers by province is available. For the purposes of estimating program coverage within individual provinces, total *planned* beneficiary caseloads are divided by 6 to derive individual province planned caseloads. Actual program implementation may differ depending on province-specific needs so these estimates should be viewed with some caution.

[42] "Actual number of beneficiaries to date" reflects the number of beneficiaries served within the province during the first quarter of 2009.

CS	Coverage	Timing	Ration (kcals)	program duration	*Planned* Total Number of Beneficiaries *Per Year*[41]	*Actual* Number of Beneficiaries *To Date*[42]
WFP	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	Per WFP, discussions w/ partners re program magnitudes ongoing, expect implementation Sept 2009 (115,500 total for am)	
WFP	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	19,250 in Kirundo (115,500 total for pm)	48,831
WFP	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	11,667 in Kirundo (70,000 total for child and mother)	3,646
WFP	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	11,667 in Kirundo (70,000 total for child and mother)	765
WFP	HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	1000 in Kirundo (6000 total)	

As noted in the analysis for Cibitoke province, there is currently no direct information on effectiveness of targeting within individual provinces or under specific programs, including the programs operated by CRS, WFP, and IMC within Kirundo. However, there is some indirect evidence that past targeting effectiveness was very low, though this may have been related to difficulties associated with targeting in situations of civil insecurity.

Errors of inclusion should be expected to translate into relatively smaller disincentive effects where the provincial livelihoods are less sensitive to market prices. There is a moderate percentage of agro-sellers in Kirundo (11.3 percent) compared to Cankuzo (21.1 percent) and Muyinga (17.3 percent), but a lower percentage of agriculturalists (32.6 percent) compared to Cankuzo (45.4 percent) and Muyinga (40.2). Therefore, it is difficult to draw any conclusion regarding relative sensitivity to market prices, which might imply relatively greater potential for disincentive effects.

VII.ii.iv Beneficiary Coverage Under A Proposed PM2A Program

Using poor and unacceptable FCS as proxy measures of food insecurity, the estimated numbers of food insecure households potentially eligible for a PM2A program in Kirundo are 1,120 (Poor FCS) and 12,726 (Unacceptable FCS). The table below compares available rations under the three proposed funding levels with these estimated numbers of food insecure households to assess potential absorptive capacity.

As noted above, any coverage over 100 percent should be avoided from a Bellmon perspective because, although households might be eligible based on demographic characteristics, if those households are *not* food insecure, their response to the receipt of food aid is more likely to result in disincentive to production and/or disruption of local markets.

Table 30. Available Number of Rations Relative to the Number of Food Insecure Households with PM2A Eligible Beneficiaries within Kirundo Province

PM2A Funding for Food Aid	% food aid concentrated within Kirundo	coverage (*poor* FCS)	coverage (*unacceptable* FCS)
$10 million	100%	2231%	196%
$10 million	50%	1116%	98%
$10 million	33%	736%	65%
$10 million	25%	558%	49%
$9 million	100%	2008%	177%
$9 million	50%	1004%	88%
$9 million	33%	663%	58%
$9 million	25%	502%	44%
$7.5 million	100%	1673%	147%
$7.5 million	50%	837%	74%
$7.5 million	33%	552%	49%
$7.5 million	25%	418%	37%

VII. iii. Ruyigi

Ruyigi is a land-locked province located in the northeastern part of the country. It shares borders with Tanzania in the east, Karuzi province in the northwest, Gitega in the southwest and Rutana province in the south.

According to the most recent census, the population of Ruyigi is 400,828, most of whom are smallholder farmers, producing the following crops: cereals (30 percent-40 percent), legumes (20 percent-30 percent), tubers (10 percent-20 percent), and bananas (10 percent-15 percent). Rice, sugar cane, cotton, and coffee are grown as cash crops. The main staples of the diet are beans, maize, and cassava. Food supply is largely sourced locally. The other principal sources of supply for staple commodities are imports from Gutega and Muyinga provinces, which each supply approximately 20 percent of these commodities.

Compared to the national average, Ruyigi is more dependent upon agriculture. Market opportunities are limited and the number of agro-sellers is low. The province also has a high percentage of agro-laborers and low percentage of non-agricultural laborers, which reflects the limited opportunities for off-farm employment. The table below outlines key characteristics related to food insecurity within Ruyigi, and is followed by a table which outlines the main sources of food and income of the poor and extremely poor.

Table 31. Distribution of Livelihood Strategies and Production of Staples in Ruyigi

Characteristic	Ruyigi	National Average
% Agriculturalists	42	34
% Agro-sellers	7	18
% Agro-laborers	36	21
% Laborers	8	15

Characteristic	Ruyigi	National Average
% Population with Poor Food Consumption Score (FCS), Proxy Indicator of Food Insecurity[43]	4.4	4.8
% Population with Borderline Food Consumption Score (FCS), Proxy Indicator of Food Insecurity	20.8	22.9
Prevalence of Stunting (low height-for-age) in Children <5 yrs	52.6	52.7
% HH with < 0.25 ha land	17.2	not available
% asset poor	28.6	26.9
average livestock ownership (LTU)	0.28	0.30
% HH lack access to safe water	37.5	23.0

Table 32. Main Sources of Food and Income among the Poor and Very Poor in Ruyigi Province

Group	Main sources of food	Main sources of income
Poor	Own Production of Agriculture Purchases	Skilled Labor Formal Commerce between Ruyigi Province and Tanzania
Very Poor	Own Production Local Markets Food Aid	Unskilled Labor Sale of Production Petty Trade

Due to a combination of its geography and the livelihood strategies of its population, Ruyigi is vulnerable to the following shocks:

- Extreme climatic conditions, resulting in regular crop failures
- Population displacement from the north
- Sporadic increases in food commodity prices
- The presence of cassava mosaic
- High population pressure

VII.iii.v Ongoing Development Programs

WFP has been operating a Protracted Relief and Recovery Operation (PRRO) in Burundi since January 2009. The program is expected to run through December 2010. The table below outlines the WFP programs in Ruyigi including rations, timing, and planned and actual numbers of beneficiaries.[44]

[43] See Section 5.3 for an overview of how the FCS is calculated.
[44] WFP Resourcing Update, dated 19 Jan 2009, accessed via http://www.wfp.org/sites/default/files/PRROs%20as%20of%2019%20January%202009.pdf . The report indicates an operating budget of $140 million for PRRO (only 18% funded as of 30 Apr 09, personal communication with WFP Burundi programme officer), but does not provide a breakdown by province.

Table 33. Ongoing Food Aid and Cash Transfer Programs in Ruyigi

CS	Coverage	Timing	Ration (kcals)	Program Duration	*Planned* Total Number of Beneficiaries *Per Year*[45]	*Actual* Number of Beneficiaries *To Date*[46]
WFP	General food distribution	75 days/yr in Apr/May and Nov/Jan	cereals 450g, pulses 50g, 25g oil, 5g salt (2000 kcal)	Jan 2009 - Dec 2010	91,667 in Ruyigi (550,000 total)	41,178
	Refugees	360 days	cereals 360g, pulses 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	3,333 in Ruyigi (20,000 total)	0
	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010	5,833 in Ruyigi (35,000 total)	2,354
	Therapeutic Feeding/ infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	667 in Ruyigi (3000 total for infants and caregivers)	22
	Therapeutic Feeding/ caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	1,000 in Ruyigi (6,000 total)	17
	Institutional Feeding	360 days	cereals 360g, pulses (beans) 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	667 in Ruyigi (4,000 total)	0
	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	40,667 in Ruyigi (244,000 total)	2,147
	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	Per WFP, discussions w/ partners re program magnitudes ongoing, expect implementation Sept 2009 (115,500 total for am)	
	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	19,250 in Ruyigi (115,500 total for pm)	20,387
	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Ruyigi (70,000 total for child and mother)	707
	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Ruyigi (70,000 total for child and mother)	534
	HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	1000 in Ruyigi (6000 total)	190

As noted in the analysis for Cibitoke province, there is currently no direct information on effectiveness of targeting within individual provinces or under specific programs, including the programs operated by WFP within Ruyigi. However, there is some indirect evidence that past targeting effectiveness was very low, though this may have been related to difficulties associated with targeting in situations of civil insecurity.

Poor targeting of food aid should be expected to translate into relatively smaller disincentive effects where the provincial livelihoods are less sensitive to market prices. Relative to Cibitoke and Kirundo, there is a low proportion of agro-sellers in Ruyigi and a high proportion of

[45] WFP is implementing a 24-month PRRO in Burundi with a geographic focus primarily on 6 provinces (Kirundo, Ngozi, Kayanza, Karuzi, Muyinga and Ruyigi). However, certain programs may extend beyond these provinces, for example, to disaster-prone areas (for GFD) or areas with low school enrollment (for school feeding programs). No breakdown of planned beneficiary numbers by province is available. For the purposes of estimating program coverage within individual provinces, total *planned* beneficiary caseloads are divided by 6 to derive individual province planned caseloads. Actual program implementation may differ depending on province-specific needs so these estimates should be viewed with some caution.

[46] "Actual number of beneficiaries to date" reflects the number of beneficiaries served within the province during the first quarter of 2009.

agriculturalists. To the extent agriculturalists make production decisions less in response to market prices than in response to other considerations, we could expect relatively lower potential for disincentive effects.

VII.iii.vi Beneficiary Coverage Under A Proposed PM2A Program

Using poor and unacceptable FCS as proxy measures of food insecurity, the estimated numbers of food insecure households potentially eligible for a PM2A program in Ruyigi are 1,120 (Poor FCS) and 12,726 (Unacceptable FCS). The table below compares available rations under the three proposed funding levels with these estimated numbers of food insecure households to assess potential absorptive capacity.

As noted above, any coverage over 100 percent which is provided can be considered indicative of weak targeting (i.e., inclusion error).

Table 34. Available Number of Rations Relative to the Number of Food Insecure Households with PM2A Eligible Beneficiaries within Ruyigi Province

PM2A Funding for Food Aid	% food aid concentrated within Ruyigi	coverage (*poor* FCS)	coverage (*unacceptable* FCS)
$10 million	100%	1771%	310%
$10 million	50%	885%	155%
$10 million	33%	584%	102%
$10 million	25%	443%	78%
$9 million	100%	1594%	279%
$9 million	50%	797%	140%
$9 million	33%	526%	92%
$9 million	25%	398%	70%
$7.5 million	100%	1328%	233%
$7.5 million	50%	664%	116%
$7.5 million	33%	438%	77%
$7.5 million	25%	332%	58%

VII. iv. Muyinga

Muyinga is a land-locked province located in the north eastern part of the country. It shares borders with Rwanda in the north, Tanzania in the east, and Ngozi, Karuzi, and Cankuzo provinces in the west and south. The territory falls within one major livelihood zone, Plateaux Secs de L'Est (Dry Eastern Plateau), classified as Phase 2 - Moderate Food Insecurity. The commune of Giteranyi is an exception. It falls primarily within the Dépression Nord (Northern Lowlands), and is currently classified as Phase 3 - Acute Food and Livelihoods Crisis.[47]

[47] Republic of Burundi Ministry of Agriculture and Husbandry, "Cadre Intégré de Classification de la Sécurité Alimentaire," released April 2009.

The most recent census estimates the population is 632,346, most of whom are smallholder farmers. The main local staples are beans, sweet potato, and cassava.

Compared with the other four provinces under review, Muyinga has a relatively high percentage of agro-sellers, suggesting a more sophisticated and integrated market. While this may imply greater opportunities for securing livelihoods, perhaps reflected in the IPC classification as only moderately food insecure, Muyinga has the third highest percentage of Poor FCS households among all rural provinces (8.6 percent). This is second only to Karuzi (10.6 percent) and Cankuzo (8.7 percent). The table below outlines key characteristics related to food insecurity within Muyinga.

Table 35. Key Characteristics Related to Food Insecurity within Muyinga

Characteristic	Muyinga	National Average
% Agriculturalists	40	34
% Agro-sellers	18	18
% Agro-laborers	18	21
% Laborers	11	15
% Population with Poor Food Consumption Score (FCS), Proxy Indicator of Food Insecurity[48]	8.6	4.8
% Population with Borderline Food Consumption Score (FCS), Proxy Indicator of Food Insecurity	22.6	22.9
Prevalence of Stunting (low height-for-age) in Children <5 yrs[49]	56.6	52.7
% HH with < 0.25 ha land	16.5	not available
% asset poor	26.7	26.9
average livestock ownership (LTU)	0.25	0.30
% HH lack access to safe water	23.5	23.6

Due to a combination of its geography and the livelihood strategies of its population, Muyinga is vulnerable to shocks due to poor rainfall, high food prices, and the effects of cassava mosaic.

VII.iv.vii Ongoing Development Programs

WFP and CRS/IMC are currently operating a variety of programs in Muyinga. There are no cash transfer programs of which these authors are presently aware. The table below outlines the programs in Muyinga including rations, timing, and planned and actual numbers of beneficiaries.

[48] See Section 5.3 herein and.CFSVA 2008, pp51-54, for further details of how the FCS is calculated.
[49] Despite the weak relationship between malnutrition and food security, prevalence of stunting (low height-for-age) in children under 5 is reported here because they are interesting in their own right since because they are an important indicator of chronic undernutrition. Notably, there is an extremely high prevalence of stunting throughout Burundi – only five out of 16 provinces have prevalence less than 50%. However, there is no clear difference in stunting rates across the three provinces under review.

Table 36. Ongoing Food Aid and Cash Transfer Programs in Muyinga

CS	Coverage	Timing	Ration (kcals)	Program Duration	PLANNED Number of Beneficiaries PER YEAR	ACTUAL Number of Beneficiaries TO DATE
WFP	Refugees	360 days	cereals 360g, pulses 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	9000	9031
WFP	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010	1000	547
WFP	Institutional Feeding	360 days	cereals 360g, pulses (beans) 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	461	461
WFP	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	12575	distribution expected to start in June
WFP	FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	125	distribution expected to start in June
WFP	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	27541	27541
WFP	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	27541	27541
CRS /IMC	Therapeutic Feeding/infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	168	
CRS /IMC	Therapeutic Feeding/caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	252	
CRS /IMC	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	19512	
CRS /IMC	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	6384	
CRS /IMC	HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	258 patients (1290 beneficiaries in families)	

At this stage, no direct information on effectiveness of targeting is available within individual provinces or under specific programs, including the WFP PRRO. However, please see general discussion related to past targeting effectiveness under section VI.i above.

Poor targeting of food aid should be expected to translate into relatively larger disincentive effects where the provincial livelihoods are more sensitive to market prices. Even though the percentage of agriculturalists is also very high in Muyinga, the fact that the province also has a

large percentage agro-sellers makes it more sensitive to market prices than either Kirundo or Ruyigi, which both have a relatively greater proportion of agriculturalists living off their own production.

VII.iv.viii Beneficiary Coverage Under A Proposed PM2A Program

Using poor FCS as a proxy indicator of food insecurity, there are an estimated 4,351 food insecure households potentially eligible for a PM2A program in Muyinga. Using Unacceptable FCS, there are 15,834 potentially eligible households. To assess potential absorptive capacity, the table below provides a comparison of available rations under the three proposed funding levels (US$10 million, US$9 million, and US$7.5 million spent directly on food rations) and four possible concentration levels (100 percent, 50 percent, 33 percent, and 25 percent concentration within a given province) with the estimated number of food insecure households with eligible beneficiaries.

Any coverage over 100 percent which is provided can be considered inclusion error, meaning that households which might be eligible based on demographic characteristics but which would *not* be considered food insecure on the basis of a proxy indicator (as defined within this report) would likely receive PM2A rations if the PM2A program is restricted geographically to the five provinces considered for this particular analysis.

Table 37. Available Number of Rations Relative to the Number of Food Insecure Households with PM2A Eligible Beneficiaries within Muyinga Province

	% food aid concentrated within Muyinga	coverage (poor FCS)	coverage (unacceptable FCS)
$10 million	100%	881%	187%
$10 million	50%	440%	93%
$10 million	33%	291%	62%
$10 million	25%	220%	47%
$9 million	100%	793%	168%
$9 million	50%	396%	84%
$9 million	33%	262%	55%
$9 million	25%	198%	42%
$7.5 million	100%	661%	140%
$7.5 million	50%	330%	70%
$7.5 million	33%	218%	46%
$7.5 million	25%	165%	35%

VII. v. Cankuzo

Cankuzo is a land-locked province located in the east. It shares borders with Tanzania in the east, and Muyinga, Karuzi, and Ruyigi provinces in the north, west, and south. The territory falls within two livelihood zones of Plateaux Secs de L'Est and Dépression de l'Est. The western

communes are classified as Phase 2 - Moderate Food Insecurity, while the eastern communes are currently classified as Phase 3 - Acute Food and Livelihoods Crisis.[50]

The most recent census estimates the population of Cankuzo at 221,391, most of whom are smallholder farmers. The main local staples are beans, sweet potato, cassava, and corn.

Compared with the other four provinces under review, Cankuzo has a relatively high percentage of both agriculturalists and agro-sellers, suggesting a more sophisticated and integrated market. While this may imply greater opportunities for securing livelihoods, perhaps reflected in the IPC classification as only moderately food insecure, Cankuzo has the second highest percentage of Poor FCS households among all rural provinces (8.6 percent), and the highest among the five provinces under review. The table below outlines key characteristics related to food insecurity within Cankuzo.

Table 38. Key Characteristics Related to Food Insecurity within Cankuzo

Characteristic	Cankuzo	National Average
% Agriculturalists	45	34
% Agro-sellers	21	18
% Agro-laborers	15	21
% Laborers	15	15
% Population with Poor Food Consumption Score (FCS), Proxy Indicator of Food Insecurity[51]	8.7	4.8
% Population with Borderline Food Consumption Score (FCS), Proxy Indicator of Food Insecurity	25.4	22.9
Prevalence of Stunting (low height-for-age) in Children <5 yrs[52]	44.9	52.7
% HH with < 0.25 ha land	16.9	not available
% asset poor	30.1	26.9
average livestock ownership (LTU)	0.32	0.30
% HH lack access to safe water	29.2	23.6

Due to a combination of its geography and the livelihood strategies of its population, Cankuzo is vulnerable to shocks due to poor rainfall, high food prices, and the effects of cassava mosaic.

VII.v.ix Ongoing Development Programs

WFP has been operating a Protracted Relief and Recovery Operation (PRRO) in Burundi since January 2009. The program is expected to run through December 2010. Current activities in Cankuzo include ration provision to returnees, school feeding, therapeutic feeding, and MCH/N. Other planned activities include Food for Assets and Food for Training. The table below

[50] Republic of Burundi Ministry of Agriculture and Husbandry, "Cadre Intégré de Classification de la Sécurité Alimentaire," released April 2009.
[51] See Section 5.3 herein, and.CFSVA 2008, pp51-54, for further details of how the FCS is calculated.
[52] Despite the weak relationship between malnutrition and food security, prevalence of stunting (low height-for-age) in children under 5 is reported here because they are interesting in their own right since because they are an important indicator of chronic undernutrition. Notably, there is an extremely high prevalence of stunting throughout Burundi – only five out of 16 provinces have prevalence less than 50%. However, there is no clear difference in stunting rates across the three provinces under review.

outlines the WFP programs in Cankuzo including rations, timing, and planned and actual numbers of beneficiaries.[53]

Table 39. Ongoing Food Aid and Cash Transfer Programs in Cankuzo

CS	Coverage	Timing	Ration (kcals)	Program Duration	PLANNED Number of Beneficiaries PER YEAR	ACTUAL Number of Beneficiaries TO DATE
WFP	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010	1500	1085
WFP	Therapeutic Feeding / infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	120	10
WFP	Therapeutic Feeding / caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	156	13
WFP	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	9900	Distribution expected to start in June
WFP	FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	100	Distribution expected to start in June
WFP	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	27150	27150
WFP	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	27150	27150
WFP	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	10788	743
WFP	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	1056	88
WFP	HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	87 Patients (435 Beneficiaries in families)	87 Patients (435 Beneficiaries in families)

[53] WFP Resourcing Update, dated 19 Jan 2009, accessed via http://www.wfp.org/sites/default/files/PRROs%20as%20of%2019%20January%202009.pdf . The report indicates an operating budget of US$140 million for PRRO (only 18 percent funded as of 30 Apr 09, personal communication with WFP Burundi programme officer), but does not provide a breakdown by province.

At this stage, no direct information on effectiveness of targeting is available within individual provinces or under specific programs, including the WFP PRRO. However, please see general discussion related to past targeting effectiveness under section VI.i above.

Errors of inclusion should be expected to translate into relatively larger disincentive effects where the provincial livelihoods are more sensitive to market prices. Because there is a high proportion of both agriculturalists and agro-sellers in Cankuzo, sensitivity to market prices may be relatively greater than in either Kirundo or Ruyigi; however, it is difficult to draw any conclusion regarding relative sensitivity to market prices, which might imply relatively greater potential for disincentive effects.

VII.v.x Beneficiary Coverage Under a Proposed PM2A Program

Among the five provinces under review, Cankuzo has the highest percentage of food insecure households using Poor FCS. However, its total population of 22,391 is the lowest compared to other provinces. Using poor FCS as a proxy indicator of food insecurity, there are an estimated 1,541 food insecure households potentially eligible for a PM2A program in Cankuzo. Using Unacceptable FCS, there are 6,022 potentially eligible households.

To assess potential absorptive capacity, the table below provides a comparison of available rations under the three proposed funding levels (US$10 million, US$9 million, and US$7.5 million spent directly on food rations) and four possible concentration levels (100 percent, 50 percent, 33 percent, and 25 percent concentration within a given province) with the estimated number of food insecure households with eligible beneficiaries.

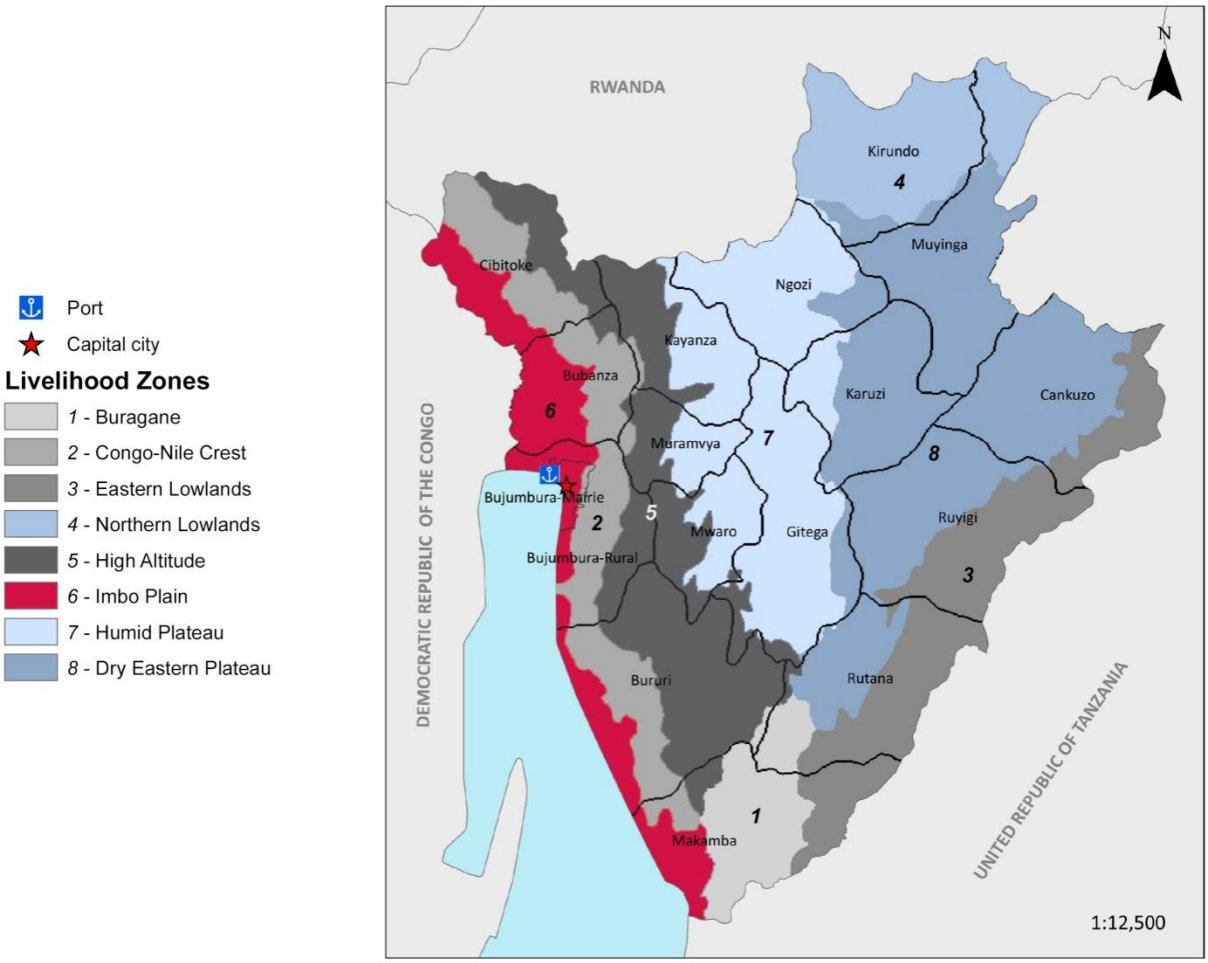
Any coverage over 100 percent which is provided can be considered inclusion error, meaning that households which might be eligible based on demographic characteristics but which would *not* be considered food insecure on the basis of a proxy indicator (as defined within this report) would likely receive PM2A rations if the PM2A program is restricted geographically to the five provinces considered for this particular analysis.

Table 40. Available Number of Rations Relative to the Number of Food Insecure Households with PM2A Eligible Beneficiaries within Cankuzo Province

PM2A Funding for Food Aid	% food aid concentrated within Cankuzo	coverage (*poor* FCS)	coverage (*unacceptable* FCS)
$10 million	100%	1622%	415%
$10 million	50%	811%	207%
$10 million	33%	535%	137%
$10 million	25%	405%	104%
$9 million	100%	1459%	373%
$9 million	50%	730%	187%
$9 million	33%	482%	123%
$9 million	25%	365%	93%
$7.5 million	100%	1216%	311%

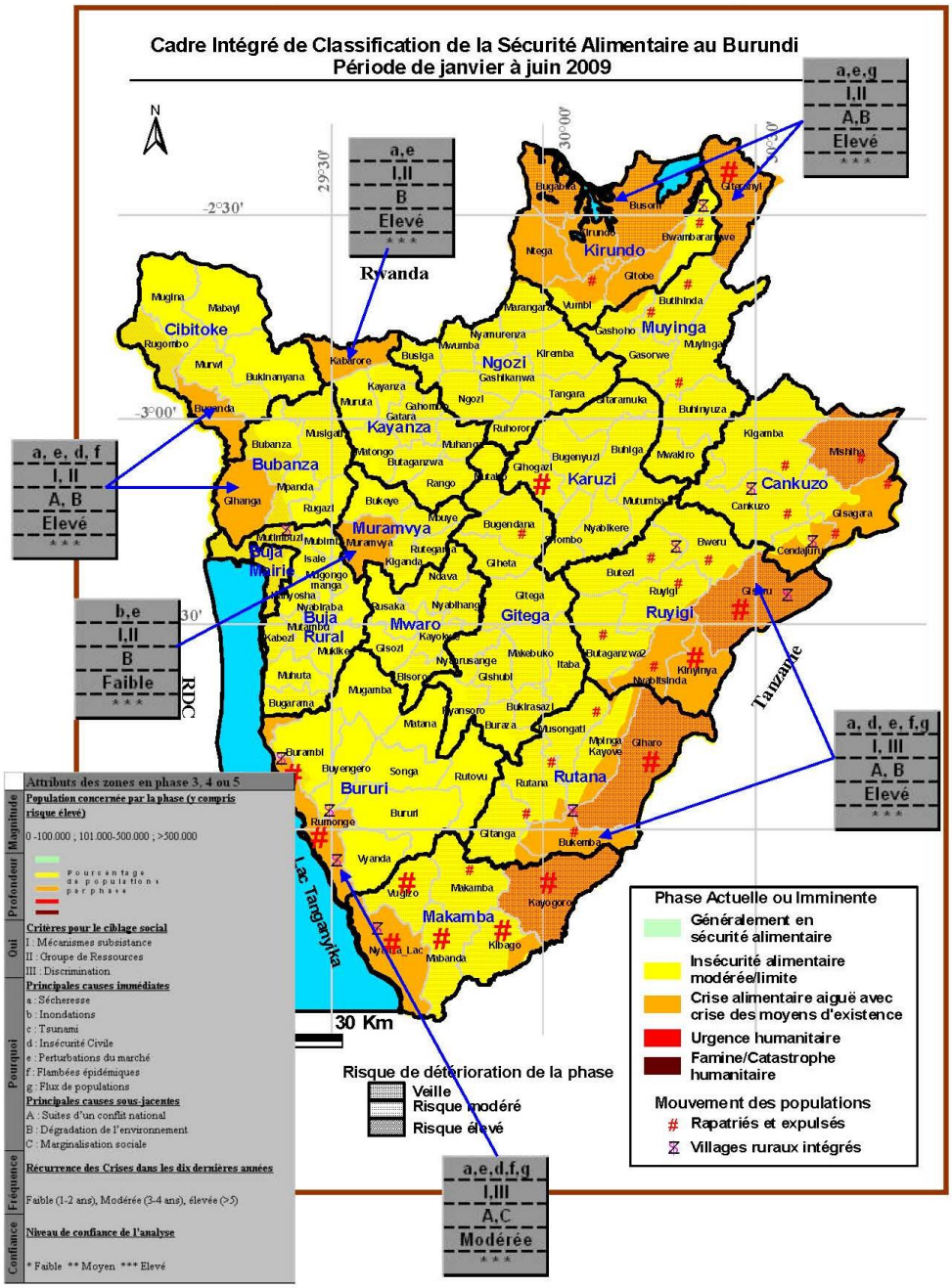
PM2A Funding for Food Aid	% food aid concentrated within Cankuzo	coverage (*poor* FCS)	coverage (*unacceptable* FCS)
$7.5 million	50%	608%	156%
$7.5 million	33%	401%	103%
$7.5 million	25%	304%	78%

Annex VIII. Map of Livelihood Zones



Source: Republic of Burundi Ministry of Agriculture and Husbandry, "Evaluation des Récoltes, des Approvisionnements Alimentaire et de la Situation Nutritionnelle – Saison 2008B" 2008

Annex IX. IPC Map for Agricultural Season A, 2009



Source: Burundi IPC Map Jan-June 2009

Annex X. Burundi's Seasonal Calendar

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Agricultural Season	Harvest Season A		Planting Season B			Harvest Season B			Planting Season A			Harvest Season A
Labor		Peak for agricultural and manual labor							Peak for agricultural and manual labor			
Migration		Peak for migration							Peak for migration			
Trade and Expenditures					Peak for small trade activity, sale of cereals, tubers and pulses							
		Peak for purchase of cereals, tubers and pulses							Peak for purchase of cereals, tubers and pulses			
		Month of high food and total expenditures and debts							Month of high food and total expenditures and debts			
						Months for reimbursement of Debts						
Food Prices	Low Prices	High prices			Low prices				High Prices			Low prices
Food Security		Months with food insecurity							Months with food insecurity			
Shocks							Lack of drinking water					
			Drought			Drought						
			Hail			Livestock epidemics						
		Flood										
		Erosion										
		Insecurity										

Source: WFP CFSVA 2008

Annex XI. Ongoing Food Aid & Cash Transfer Programs in Five Select Provinces

Table 41. Ongoing Food Aid and Cash Transfer Programs

Province	CS	Coverage	Timing	Ration (kcals)	program duration	*Planned* Total Number of Beneficiaries *Per Year*[54]	*Actual* Number of Beneficiaries *To Date*[55]
CIBITOKE	WFP	Therapeutic Feeding/infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	500 total for infants and caregivers in Cibitoke (3,000 total)	72
		Therapeutic Feeding/caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	500 total for infants and caregivers in Cibitoke (3,000 total)	72
		FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	12,500 in Cibitoke (244,000 total)	0
		FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	1,200 in Cibitoke (6,000 total)	0
		MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Cibitoke (70,000 total)	641
		MCH/mother	270 days	cereals 100g, pulses 50g, oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Cibitoke (70,000 total)	468
		HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	1,000 in Cibitoke (6,000 total)	69

[54] WFP is implementing a 24-month PRRO in Burundi with a geographic focus primarily on 6 provinces (Kirundo, Ngozi, Kayanza, Karuzi, Muyinga and Ruyigi). However, certain programs may extend beyond these provinces, for example, to disaster-prone areas (for GFD) or areas with low school enrollment (for school feeding programs). No breakdown of planned beneficiary numbers by province is available. For the purposes of estimating program coverage within individual provinces, total *planned* beneficiary caseloads are divided by 6 to derive individual province planned caseloads. Actual program implementation may differ depending on province-specific needs so these estimates should be viewed with some caution.

[55] "Actual number of beneficiaries to date" reflects the number of beneficiaries served within the province during the first quarter of 2009.

Table 42. Other Food Aid and Cash Transfer Programs (cont.)

Province	CS	Coverage	Timing	Ration (kcals)	Program Duration	*Planned* Total Number of Beneficiaries *Per Year*[56]	*Actual* Number of Beneficiaries *To Date*
RUYIGI	**WFP**	General food distribution	75 days/yr in Apr/May and Nov/Jan	cereals 450g, pulses 50g, 25g oil, 5g salt (2000 kcal)	Jan 2009 - Dec 2010	91,667 in Ruyigi (550,000 total)	41,178
RUYIGI	**WFP**	Refugees	360 days	cereals 360g, pulses 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	3,333 in Ruyigi (20,000 total)	0
RUYIGI	**WFP**	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010	5,833 in Ruyigi (35,000 total)	2,354
RUYIGI	**WFP**	Therapeutic Feeding/infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	667 in Ruyigi (3000 total for infants and caregivers)	22
RUYIGI	**WFP**	Therapeutic Feeding/caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	1,000 in Ruyigi (6,000 total)	17
RUYIGI	**WFP**	Institutional Feeding	360 days	cereals 360g, pulses (beans) 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	667 in Ruyigi (4,000 total)	0
RUYIGI	**WFP**	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	40,667 in Ruyigi (244,000 total)	2,147
RUYIGI	**WFP**	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	Per WFP, discussions w/ partners re program magnitudes ongoing, expect implementation Sept 2009 (115,500 total for am)	
RUYIGI	**WFP**	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	19,250 in Ruyigi (115,500 total for pm)	20,387
RUYIGI	**WFP**	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Ruyigi (70,000 total for child and mother)	707
RUYIGI	**WFP**	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	11,667 total for child and mother in Ruyigi (70,000 total for child and mother)	534
RUYIGI	**WFP**	HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	1000 in Ruyigi (6000 total)	190
KIRUNDO	**CRS**	Supplementary Feeding		CSB 240g, oil 30g per day	Aug 2008 - July 2011	2700	
KIRUNDO	**CRS**	OutPatient Therapeutic Feeding		bulgur 330g, lentils 330g, CSB 50g, oil 25g	Aug 2008 - July 2011		
KIRUNDO	**CRS**	CTC – stabilization center		bulgur 330g, lentils 330g, CSB 50g, oil 25g, salt 5g	Aug 2008 - July 2011		
KIRUNDO	**CRS**	PLHIV	360 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, sugar 22g per person per day (dry/monthly)	Aug 2008 - July 2011	700 – 800	
KIRUNDO	**CRS**	FFA		CMSF 1.5kg, lentils 0.5 kg per person per day	Aug 2008 - July 2011	1800 in Kirundo (est.) (5400 Total)	

[56] See footnote 46 for discussion of planned versus actual number of beneficiaries.

Province	CS	Coverage	Timing	Ration (kcals)	Program Duration	*Planned* Total Number of Beneficiaries *Per Year*[56]	*Actual* Number of Beneficiaries *To Date*
KIRUNDO	**IMC**	Therapeutic Feeding/infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)		35,000 in Kirundo	
KIRUNDO	**IMC**	Therapeutic Feeding/caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)		500 total for infants and caregivers in Kirundo (3,000 total)	
KIRUNDO	**WFP**	General food distribution	75 days/yr in Apr/May and Nov/Jan	cereals 450g, pulses 50g, 25g oil, 5g salt (2000 kcal)	Jan 2009 - Dec 2010	91,667 in Kirundo (550,000 total)	82,010
KIRUNDO	**WFP**	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010		0
KIRUNDO	**WFP**	Institutional Feeding	360 days	cereals 360g, pulses (beans) 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	667 in Kirundo (4,000 total)	340
KIRUNDO	**WFP**	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	40,667 in Kirundo (244,000 total)	5,200
KIRUNDO	**WFP**	FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	500 in Kirundo (6,000 total)	0
KIRUNDO	**WFP**	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	Per WFP, discussions w/ partners re program magnitudes ongoing, expect implementation Sept 2009 (115,500 total for am)	
KIRUNDO	**WFP**	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	19,250 in Kirundo (115,500 total for pm)	48,831
KIRUNDO	**WFP**	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	11,667 in Kirundo (70,000 total for child and mother)	3,646
KIRUNDO	**WFP**	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	11,667 in Kirundo (70,000 total for child and mother)	765
KIRUNDO	**WFP**	HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	1000 in Kirundo (6000 total)	
MUYINGA	**WFP**	Refugees	360 days	cereals 360g, pulses 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	9000	9031
MUYINGA	**WFP**	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010	1000	547
MUYINGA	**WFP**	Institutional Feeding	360 days	cereals 360g, pulses (beans) 120g, veg oil 25g, CSB 50g, salt 5g (2107 kcal)	Jan 2009 - Dec 2010	461	461
MUYINGA	**WFP**	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	12575	distribution expected to start in June
MUYINGA	**WFP**	FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	125	distribution expected to start in June
MUYINGA	**WFP**	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	27541	27541
MUYINGA	**WFP**	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	27541	27541
MUYINGA	**CRS/IMC**	Therapeutic Feeding/infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	168	
MUYINGA	**CRS/IMC**	Therapeutic Feeding/caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	252	
MUYINGA	**CRS/IMC**	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	19512	
MUYINGA	**CRS/IMC**	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	6384	
MUYINGA		HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	258 patients (1290 beneficiaries in families)	
CANKUZO	**WFP**	Returnees	180 days	cereals 400g, pulses 120g, veg oil 30g, salt 5g (2108 kcal)	Jan 2009 - Dec 2010	1500	1085

Province	CS	Coverage	Timing	Ration (kcals)	Program Duration	*Planned* Total Number of Beneficiaries *Per Year*[56]	*Actual* Number of Beneficiaries *To Date*
CANKUZO	**WFP**	Therapeutic Feeding/infants	21 days	oil 10g, CSB 70g, sugar 10g (392 kcal)	Jan 2009 - Dec 2010	120	10
CANKUZO	**WFP**	Therapeutic Feeding/caregivers	21 days	cereals 360g, pulses 120g, oil 25g, CSB 50g, sugar 5g (2107 kcal)	Jan 2009 - Dec 2010	156	13
CANKUZO	**WFP**	FFA	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	9900	Distribution expected to start in June
CANKUZO	**WFP**	FFT	90 days	cereals 400g, pulses 50g, oil 25g, salt 5g (1829 kcal)	Jan 2009 - Dec 2010	100	Distribution expected to start in June
CANKUZO	**WFP**	School feeding, am shift	190 days	oil 15g, CSB 120g, sugar 22g (704 kcal)	Jan 2009 - Dec 2010	27150	27150
CANKUZO	**WFP**	School feeding, pm shift	190 days	cereals 150g, pulses 50g, oil 15g, salt 3g (840 kcal)	Jan 2009 - Dec 2010	27150	27150
CANKUZO	**WFP**	MCH/child	90 days	oil 30g, CSB 240g (1226 kcal)	Jan 2009 - Dec 2010	10788	743
CANKUZO	**WFP**	MCH/mother	270 days	cereals 100g, pulses 50g, Oil 15g, CSB 100g, salt 3g (1102 kcal)	Jan 2009 - Dec 2010	1056	88
CANKUZO	**WFP**	HIV/AIDS	270 days	cereals 280g, pulses 100g, oil 25g, CSB 120g, salt 5g, sugar 22g (2103 kcal)	Jan 2009 - Dec 2010	87 Patients (435 Beneficiaries in families)	87 Patients (435 Beneficiaries in families)

Annex XII. Beneficiary Coverage Under a Proposed PM2A Program

province	population (per 2008 census)	# HHs (pop / 5.3)	% HHs with poor FCS	# food insecure HHs using poor FCS as indicator	% HHs with unacceptable FCS	# food insecure HHs using unacceptable FCS as indicator	est. pop. of eligible children & mothers	# HHs with poor FCS w/ an eligible child & mother	# HHs with unacceptable FCS with an eligible child & mother
Bubanza	348,188	65696	3.8%	2496	30.3%	19906	27855	1058	8440
Bujumbura Rural	565,070	106617	6.0%	6397	30.1%	32092	45206	2712	13607
Bururi	570,929	107722	1.0%	1077	8.8%	9480	45674	457	4019
Cankuzo	221,391	41772	8.7%	3634	34.0%	14202	17711	1541	6022
Cibitoke	460,626	86911	7.7%	6692	36.3%	31549	36850	2837	13377
Gitega	715,080	134921	3.7%	4992	22.1%	29817	57206	2117	12643
Karusi	433,061	81710	10.6%	8661	41.0%	33501	34645	3672	14204
Kayanza	586,096	110584	1.3%	1438	31.0%	34281	46888	610	14535
Kirundo	636,298	120056	2.2%	2641	25.0%	30014	50904	1120	12726
Makamba	428,917	80928	0.6%	486	7.7%	6231	34313	206	2642
Muramyva	294,891	55640	2.2%	1224	18.2%	10126	23591	519	4294
Muyinga	632,346	119311	8.6%	10261	31.3%	37344	50588	4351	15834
Mwaro	269,048	50764	2.6%	1320	28.3%	14366	21524	560	6091
Ngozi	661,310	124775	8.2%	10232	41.3%	51532	52905	4338	21850
Rutana	336,394	63471	3.1%	1968	19.3%	12250	26912	834	5194
Ruyigi	400,818	75626	4.4%	3328	25.1%	18982	32065	1411	8048
TOTAL	7,560,463	1516720	4.7%	66846	26.9%	385674	604837	28343	163526

Notes:
1. population figures based on 2008 census
2. average HH size=5.3 per 2008 CFSVA
3. CFSVA estimates of % HH with poor FCS and % HH with borderline FCS by province
4. monthly HH ration cost is based on proposed PM2A ration, May-June Commodity Calculator food and freight costs, and assuming one child six to 23 mo and one pregnant/lactating mother per HH
5. An estimated 8% of the population is made up of 6-23 months old and pregnant and/or lactating mothers.
Based on above figures, the estimated costs associated with a PM2A program of varying magnitudes are:

Cost to cover all poor FCS HH eligible for PM2A across 16 rural provinces: $11,342,751
Cost to cover all unacceptable FCS HH eligible for PM2A across 16 rural provinces: $65,443,040

Cost to cover all poor FCS HH eligible for PM2A within five highlighted provinces: $4,506,109
Cost to cover all unacceptable FCS HH eligible for PM2A within five highlighted provinces: $22,413,899

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